

FORMER CURTIS PAPER MILL SITE PARK IMPROVEMENT PROJECT

FINAL CONSTRUCTION PLANS

CONTRACT 13-13

MARCH 4, 2013

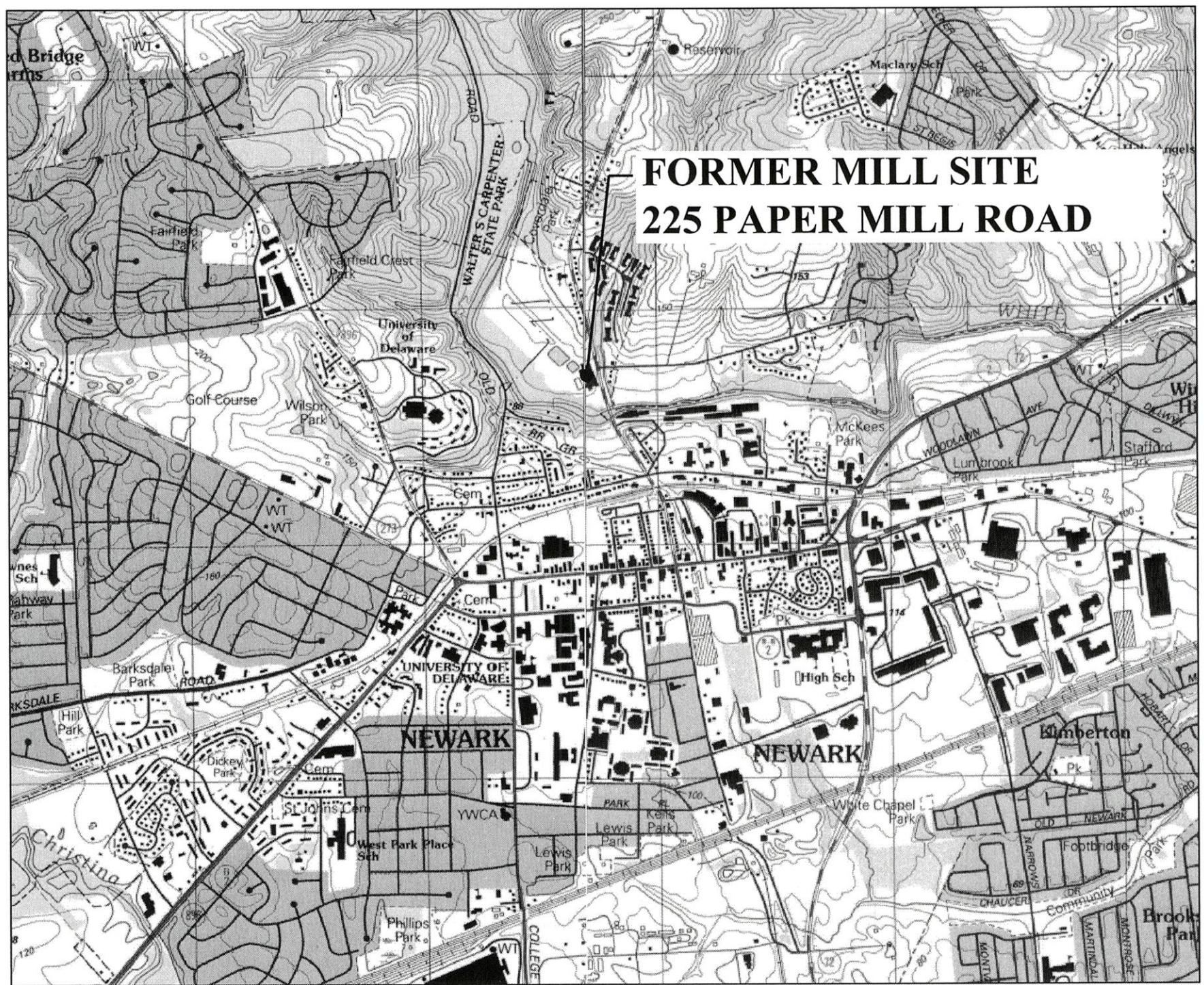
(REVISED SEPTEMBER 24, 2013)

OWNER:

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DELAWARE 19711
PHONE: 302-366-7055

DECIDUOUS TREE
CONIFEROUS TREE
FIRE HYDRANT
UTILITY POLE
SIGN
PROPOSED SIGN
LIGHT POLE
CLEAN OUT
STORM MANHOLE
ELECTRIC MANHOLE
BOLLARD OR POST
TRAFFIC LIGHT PEDESTRIAN POLE
MONITORING WELL
SANITARY MANHOLE
COMMUNICATION BOX
ELECTRIC BOX
DELDOT BOX
UNKNOWN MANHOLE
EXISTING INLET
STONE EDGE
FENCE LINE
OVERHEAD ELECTRIC
SANITARY SEWER
EXISTING STORM DRAIN PIPE
EXISTING WATER SUPPLY PIPE
EXISTING EDGE OF PAVING
PROPOSED EDGE OF PAVING
PROPERTY LINE
ADJACENT PROPERTY LINE
EFFECTIVE FLOODPLAIN LINE
REGULATORY FLOODWAY LINE
EXISTING FLOODPLAIN LINE
(BY ELEVATION)
PROPOSED FLOODPLAIN LINE
PROPOSED GATE
PROPOSED PARKING STOP
PROPOSED ACCESSIBLE PARKING
EXISTING CONTOUR
PROPOSED CONTOUR
SOIL TYPE
WOODS EDGE
PROPOSED WOODS EDGE

WATER SURFACE
WETLANDS
PROPOSED PATH
EXISTING CURB
PROPOSED CURB
PROPOSED ACCESS DRIVE
PROPOSED SIDEWALK
IMPROVEMENT AREA
INLET PROTECTION TYPE 2
STONE CHECK DAM
COMPOST FILTER LOG
SILT FENCE
SUPER SILT FENCE
TREE PROTECTION
STABILIZATION
MATTING - CHANNEL
STABILIZATION MATTING
- SLOPE
ROCK OUTLET
PROTECTION TYPE 1
SUB-DRAINAGE AREA
DRAINAGE AREA
LIMIT OF DISTURBANCE
STABILIZED
CONSTRUCTION
ENTRANCE
EROSION CONTROL MATTING
(SLOPES GREATER THAN 4:1
BUT LESS THAN 2:1)
EROSION CONTROL MATTING
(FOR 2:1 SLOPES)
EXISTING FENCE TO BE REMOVED
EXISTING STORM DRAIN TO BE REMOVED
EXISTING WALL TO BE REMOVED



SITE LOCATION MAP

SCALE: 1" = 1,500'

GENERAL NOTES:

- THE SUBJECT PARCEL LIES PARTIALLY WITHIN THE 100 YEAR FLOODPLAIN WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM THE 100 YEAR FLOOD. IN ADDITION, THE SUBJECT PARCEL LIES PARTIALLY WITHIN THE FLOODWAY OF THE WHITE CLAY CREEK, PER FEMA FLOOD INSURANCE RATE MAP PANELS #10003C0130J AND #10003C0110J WITH AN EFFECTIVE DATE OF JANUARY 17, 2007.
- THIS PLAN IS BASED ON A TOPOGRAPHICAL SURVEY BY PENNONI ASSOCIATES INC. CONDUCTED IN JULY AND AUGUST 2012. HORIZONTAL DATUM IS NAD 83/91. VERTICAL DATUM IS NAVD 1988. SITE BENCHMARK IS TP-620 CAPPED PIN SET N 616088.10, E 562573.56, ELEV 71.10. PROJECT CONTROL IS BASED UPON GPS OBSERVATIONS SET FROM CONTROL POINTS RELATIVE TO NGS CONTROL POINTS HARE2 & LUMS IN 1999.
- BOUNDARY INFORMATION ESTABLISHED FROM DEEDS.
- UTILITY INFORMATION IS FROM SURFACE EVIDENCE OBSERVED IN THE FIELD AND AS DEPICTED ON UTILITY RECORDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS IN THE FIELD PRIOR TO CONSTRUCTION.
- PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- ALL CONSTRUCTION ACTIVITIES, PLANS, AND DETAILS REGARDING THE ENTRANCE AND ROADWAY IMPROVEMENTS ARE CONTAINED IN CURTIS MILL PARK COMMERCIAL ENTRANCE PLANS BY PENNONI ASSOCIATES INC. REFERENCES TO THESE IMPROVEMENTS ARE SHOWN FOR INFORMATIONAL PURPOSES AND DO NOT SUPERSEDE THE FINAL COMMERCIAL ENTRANCE PLAN SET APPROVED BY THE DELAWARE DEPARTMENT OF TRANSPORTATION (AS AMENDED).

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EROSION AND SEDIMENT CONTROL DETAILS 5 OF 5	SHEET 17 OF 17	CS-8505



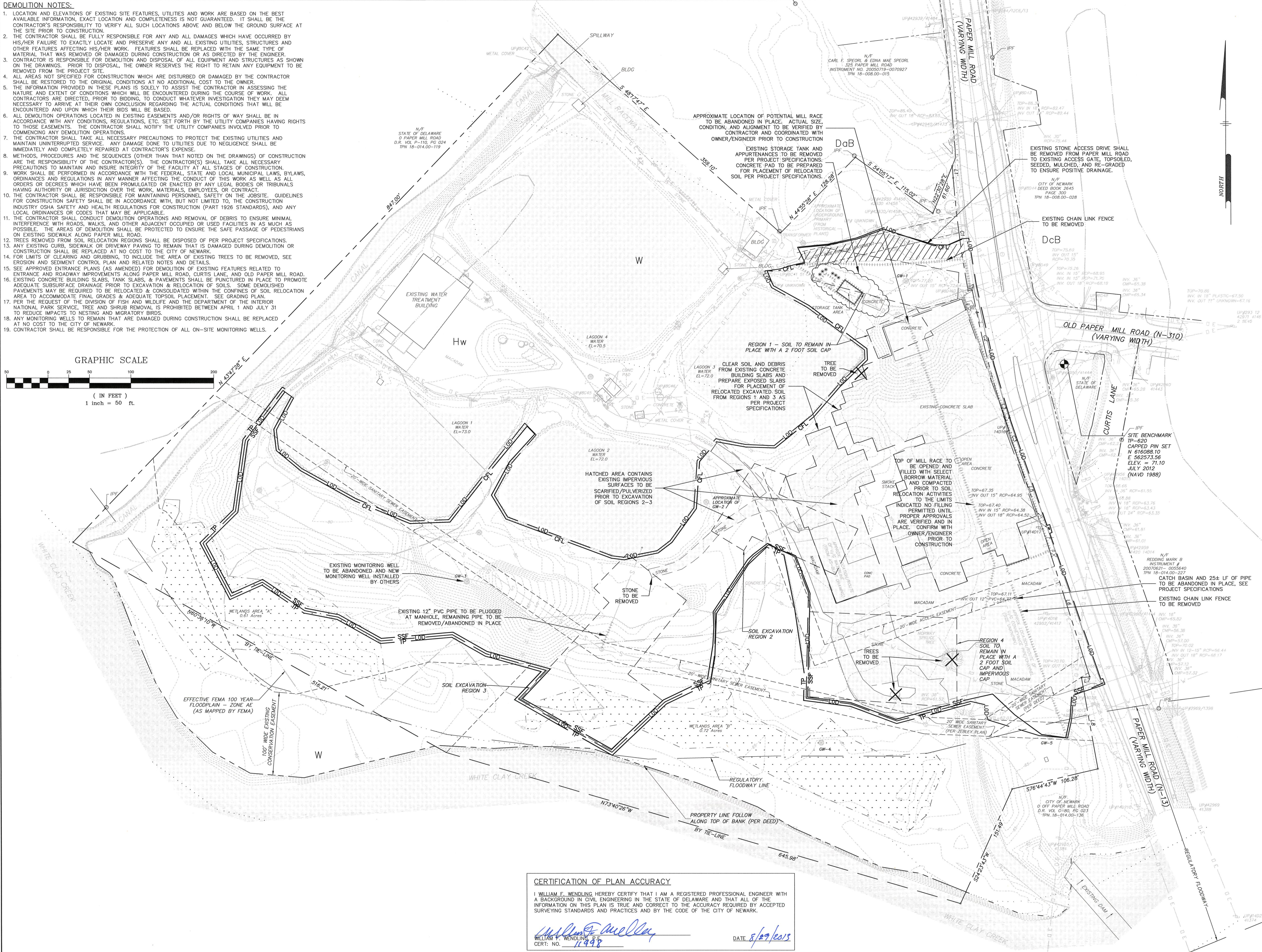
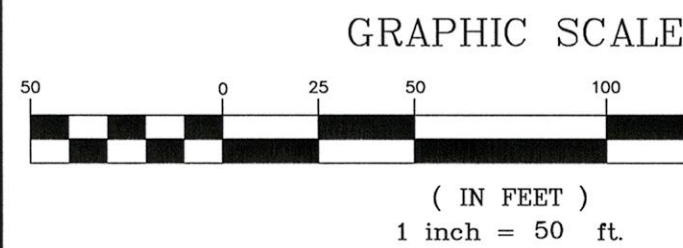
PREPARED BY:

PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

121 CONTINENTAL DRIVE - SUITE 207
NEWARK, DELAWARE 19713
PHONE: 302-655-4451
FAX: 302-654-2895

DEMOLITION NOTES:

1. LOCATION AND ELEVATIONS OF EXISTING SITE FEATURES, UTILITIES AND WORK ARE BASED ON THE BEST AVAILABLE INFORMATION. EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SUCH LOCATIONS ABOVE AND BELOW THE GROUND SURFACE AT THE SITE PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH HAVE OCCURRED BY HIS/HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS/HER WORK. FEATURES SHALL BE REPLACED WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED OR DAMAGED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF ALL EQUIPMENT AND STRUCTURES AS SHOWN ON THE DRAWINGS. PRIOR TO DISPOSAL, THE OWNER RESERVES THE RIGHT TO RETAIN ANY EQUIPMENT TO BE REMOVED FROM THE PROJECT SITE.
3. ALL AREAS NOT SPECIFIED FOR CONSTRUCTION WHICH ARE DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THE ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
4. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AND UPON WHICH THEIR BIDS WILL BE BASED.
5. ALL DEMOLITION OPERATIONS LOCATED IN EXISTING EASEMENTS AND/OR RIGHTS OF WAY SHALL BE IN ACCORDANCE WITH ANY CONDITIONS, REGULATIONS, ETC. SET FORTH BY THE UTILITY COMPANIES HAVING RIGHTS TO THOSE EASEMENTS. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES INVOLVED PRIOR TO COMMENCING ANY DEMOLITION OPERATIONS.
6. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE DONE TO UTILITIES DUE TO NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT CONTRACTOR'S EXPENSE.
7. METHODS, PROCEDURES AND THE SEQUENCES (OTHER THAN THAT NOTED ON THE DRAWINGS) OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR(S). THE CONTRACTOR(S) SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE INTEGRITY OF THE FACILITY AT ALL STAGES OF CONSTRUCTION.
8. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL MUNICIPAL LAWS, BYLAWS, ORDINANCES AND REGULATIONS IN ANY MANNER AFFECTING THE CONDUCT OF THIS WORK AS WELL AS ALL ORDERS OR DECREES WHICH HAVE BEEN PROMULGATED OR ENACTED BY ANY LEGAL BODIES OR TRIBUNALS HAVING AUTHORITY OR JURISDICTION OVER THE WORK, MATERIALS, EMPLOYEES, OR CONTRACT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PERSONNEL SAFETY ON THE JOBSITE. GUIDELINES FOR CONSTRUCTION SAFETY SHALL BE IN ACCORDANCE WITH, BUT NOT LIMITED TO, THE CONSTRUCTION INDUSTRY OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (PART 1926 STANDARDS), AND ANY LOCAL ORDINANCES OR CODES THAT MAY BE APPLICABLE.
10. THE CONTRACTOR SHALL CONDUCT DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS TO ENSURE MINIMAL INTERFERENCE WITH ROADS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES IN AS MUCH AS POSSIBLE. THE AREAS OF DEMOLITION SHALL BE PROTECTED TO ENSURE THE SAFE PASSAGE OF PEDESTRIANS ON EXISTING SIDEWALK ALONG PAPER MILL ROAD.
11. TREES REMOVED FROM SOIL RELOCATION REGIONS SHALL BE DISPOSED OF PER PROJECT SPECIFICATIONS.
12. ANY EXISTING CURB, SIDEWALK OR DRIVEWAY PAVING TO REMAIN THAT IS DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPLACED AT NO COST TO THE CITY OF NEWARK.
13. FOR LIMITS OF CLEARING AND GRUBBING, TO INCLUDE THE AREA OF EXISTING TREES TO BE REMOVED, SEE EROSION AND SEDIMENT CONTROL PLAN AND RELATED NOTES AND DETAILS.
14. SEE APPROVED ENTRANCE PLANS (AS AMENDED) FOR DEMOLITION OF EXISTING FEATURES RELATED TO ENTRANCE AND ROADWAY IMPROVEMENTS ALONG PAPER MILL ROAD, CURTIS LANE, AND OLD PAPER MILL ROAD.
15. EXISTING CONCRETE BUILDING SLABS, TANK SLABS, & PAVEMENTS SHALL BE PUNCTURED IN PLACE TO PROMOTE ADEQUATE SUBSURFACE DRAINAGE PRIOR TO EXCAVATION & RELOCATION OF SOILS. SOME DEMOLISHED PAVEMENTS MAY BE REQUIRED TO BE RELOCATED & CONSOLIDATED WITHIN THE CONFINES OF SOIL RELOCATION AREA TO ACCOMMODATE FINAL GRADES & ADEQUATE TOPSOIL PLACEMENT. SEE GRADING PLAN.
16. PER THE REQUEST OF THE DIVISION OF FISH AND WILDLIFE AND THE DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE, TREE AND SHRUB REMOVAL IS PROHIBITED BETWEEN APRIL 1 AND JULY 31 TO REDUCE IMPACTS TO NESTING AND MIGRATORY BIRDS.
17. ANY MONITORING WELLS TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO COST TO THE CITY OF NEWARK.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ON-SITE MONITORING WELLS.



CERTIFICATION OF PLAN ACCURACY

I, WILLIAM F. WENDLING, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER WITH A BACKGROUND IN CIVIL ENGINEERING IN THE STATE OF DELAWARE AND THAT ALL OF THE INFORMATION ON THIS PLAN IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY ACCEPTED SURVEYING STANDARDS AND PRACTICES AND BY THE CODE OF THE CITY OF NEWARK.

WILLIAM F. WENDLING, P.E.
CERT. NO. 11998

DATE 8/29/2015

Pennoni

NO.	DATE	REVISIONS	BY
4	08/29/13	PER CITY OF NEWARK COMMENTS	MH
3	07/17/13	PER DREC COMMENTS	MH
2	5/30/13	ISSUED FOR FINAL	SRH
1	04/15/13	PER CITY OF NEWARK COMMENTS	MH

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR BEFORE PROCEEDING WITH THE WORK



CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

EXISTING CONDITIONS/DEMOLITION PLAN

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



JOB NO.
CNEW 1207

SHEET 2 OF 17

SCALE
1"=50'

DRAWN BY
MH

DATE
1/31/13

APPROVED
WFW

DRAWING NO.

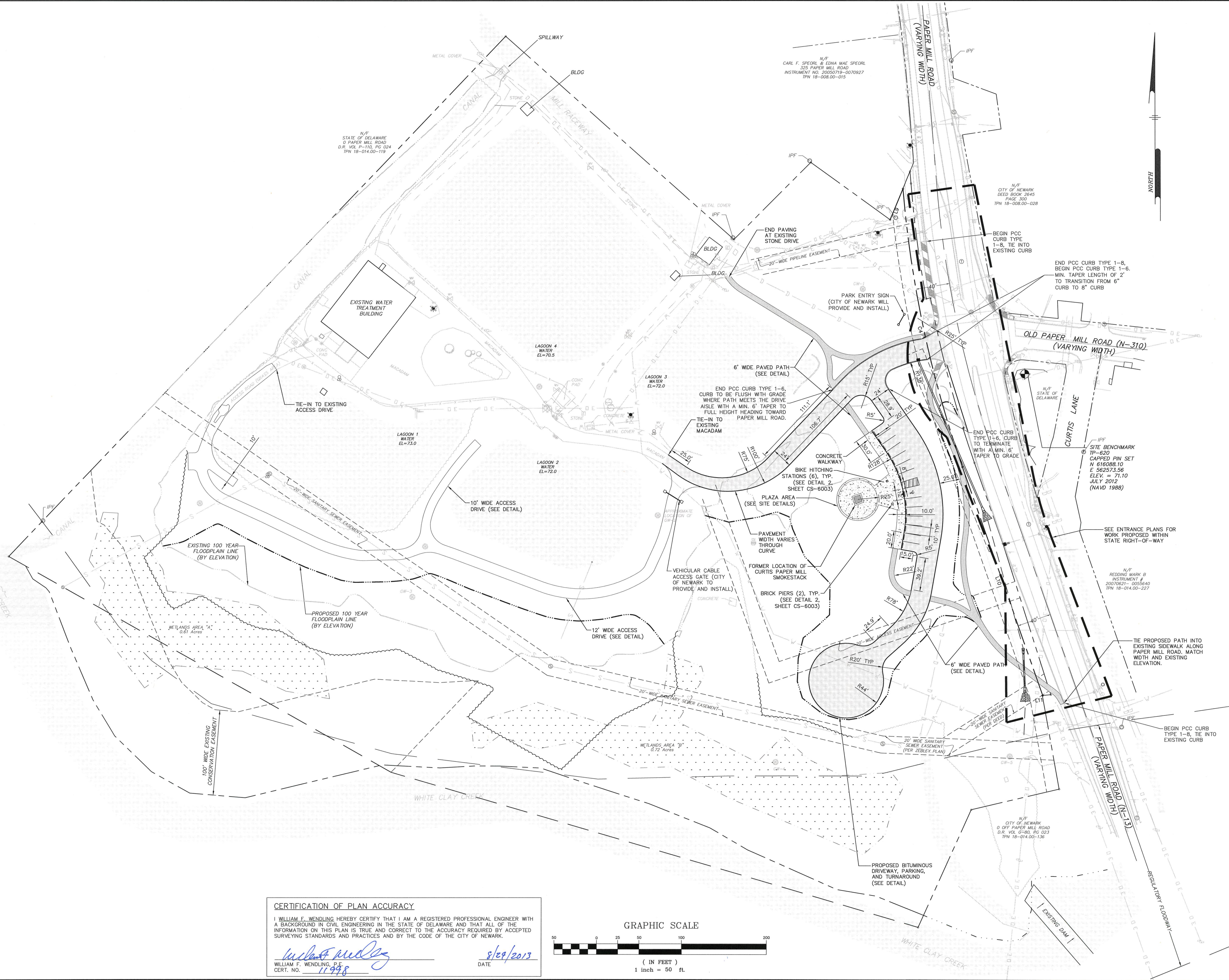
CS-0201

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Mike Rodden

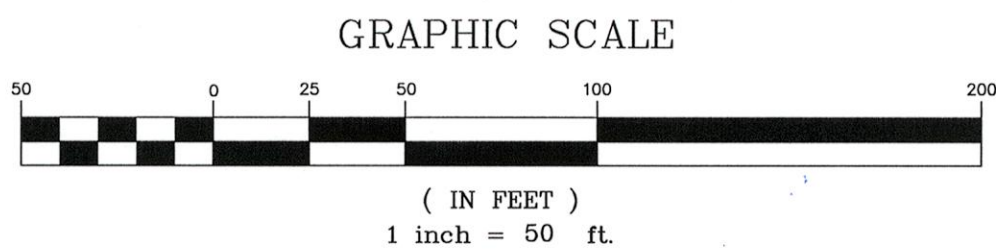


CERTIFICATION OF PLAN ACCURACY

I, WILLIAM F. WENDLING, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER WITH A BACKGROUND IN CIVIL ENGINEERING IN THE STATE OF DELAWARE AND THAT ALL OF THE INFORMATION ON THIS PLAN IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY ACCEPTED SURVEYING STANDARDS AND PRACTICES AND BY THE CODE OF THE CITY OF NEWARK.

William F. Wendling
WILLIAM F. WENDLING, P.E.
CERT. NO. 11948

8/29/2013
DATE



Pennoni

DATE	NO.	REVISIONS	BY
08/29/13	4	PER CITY OF NEWARK COMMENTS	MH
07/17/13	3	PER DNR COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SPA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

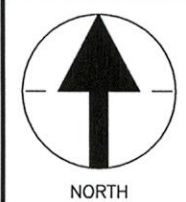


CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

SITE PLAN

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



JOB NO.
CNEW 1207

SHEET 3 OF 17

SCALE
1"=50'
DRAWN BY
MH
DATE
1/31/13
APPROVED
WFW

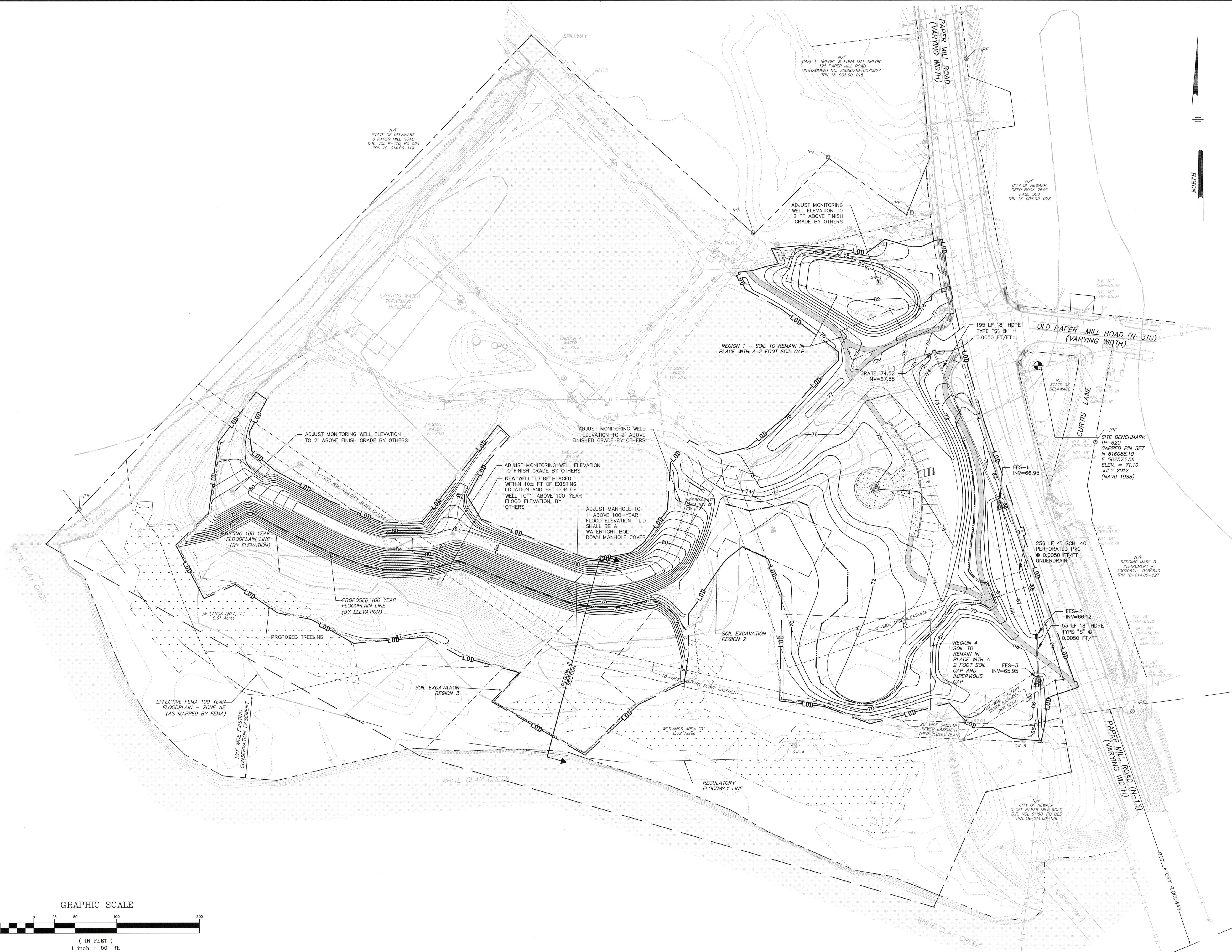
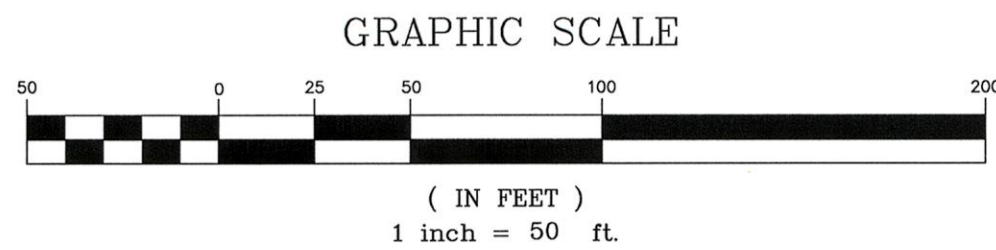
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W:\PROJECTS\NEWARK\1207-Curtis Mill Park\DWG\CS-1500.dwg
1/31/13
Mike Harkin



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Newark, DE 19713-4310 (302) 655-4451

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JOB NO.
CNEW 1207
SHEET 4 OF 17

SCALE
1"=50'
DRAWN BY
MH
DATE
1/31/13
APPROVED
WFW

DRAWING NO.
CS-1500

CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

GRADING PLAN

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
AND OWNER MUST BE NOTIFIED OF ANY
DISCREPANCIES BEFORE PROCEEDING WITH THE WORK



DATE	NO.	REVISIONS	BY
09/24/13	4	PER CITY OF NEWARK COMMENTS	MH
07/17/13	3	PER BELDOT 5/17/13 COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SRA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH



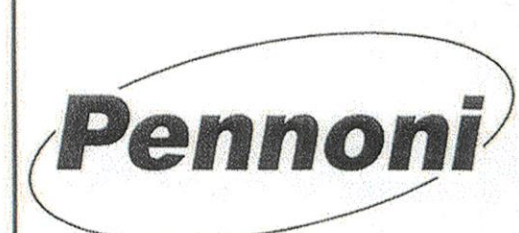
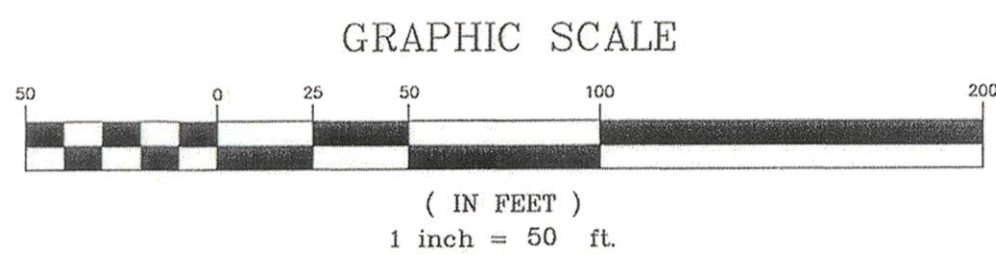
LANDSCAPING NOTES:

1. ALL TREES TO BE PLANTED AND STAKED AS PER CITY OF NEWARK PLANTING DETAIL.
2. WARRANTY ON ALL PLANT MATERIAL SHALL BE TWO(2) YEARS FROM DATE OF ACCEPTANCE BY CITY.
3. ALL PLANT MATERIAL SHALL BE WATERED TO A DEPTH OF SIX(6) INCHES THE SAME DAY IT IS PLANTED.
4. ALL PLANT MATERIALS TO BE MULCHED USING DOUBLE SHREDDED HARDWOOD MULCH TWO (2) INCHES THICK – MULCH NOT TO TOUCH FLARE/TRUNK OF TREES.
5. MULCH RINGS TO EXTEND OUT TO DRIP LINES OF INSTALLED TREES AT A MINIMUM.

PLANT QUANTITIES ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF A DISCREPANCY SHOULD ARISE BETWEEN THE PLANT SCHEDULE AND THE PLAN, THE PLAN SHALL TAKE PRECEDENCE.

PLANTING LEGEND

	DECIDUOUS TREE
	FLOWERING TREE
	EVERGREEN TREE
	EVERGREEN SHRUB
	DECIDUOUS SHRUB
	SEED MIX 'A' - MEADOW GRASS
	SEED MIX 'B' - WETLAND MEADOW
	SEED MIX 'C' - LAWN
	MULCH BED



	08/29/13	4	PER CITY OF NEWARK COMMENTS	MH
	07/17/13	3	PER DIREC COMMENTS	MH
	5/30/13	2	ISSUED FOR FINAL	SRA
	04/15/13	1	PER CITY OF NEWARK COMMENTS	MH
	DATE	NO.	REVISIONS	EY

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
BEFORE PROCEEDING WITH THE WORK

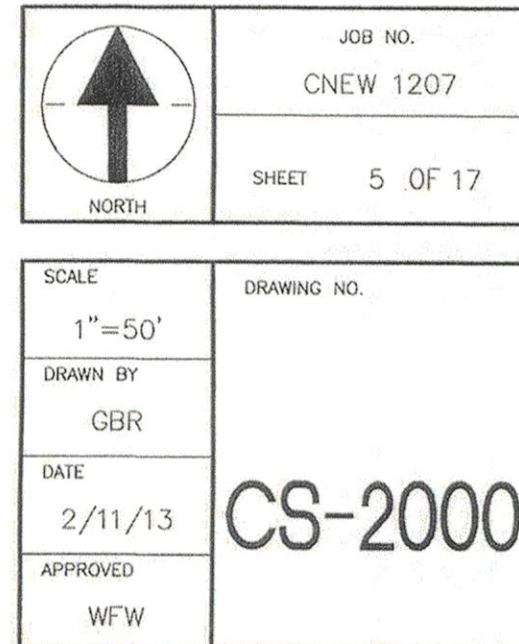
8.29.13

PETER J. STONE
No. 363
REGISTERED LANDSCAPE ARCHITECT
STATE OF DELAWARE

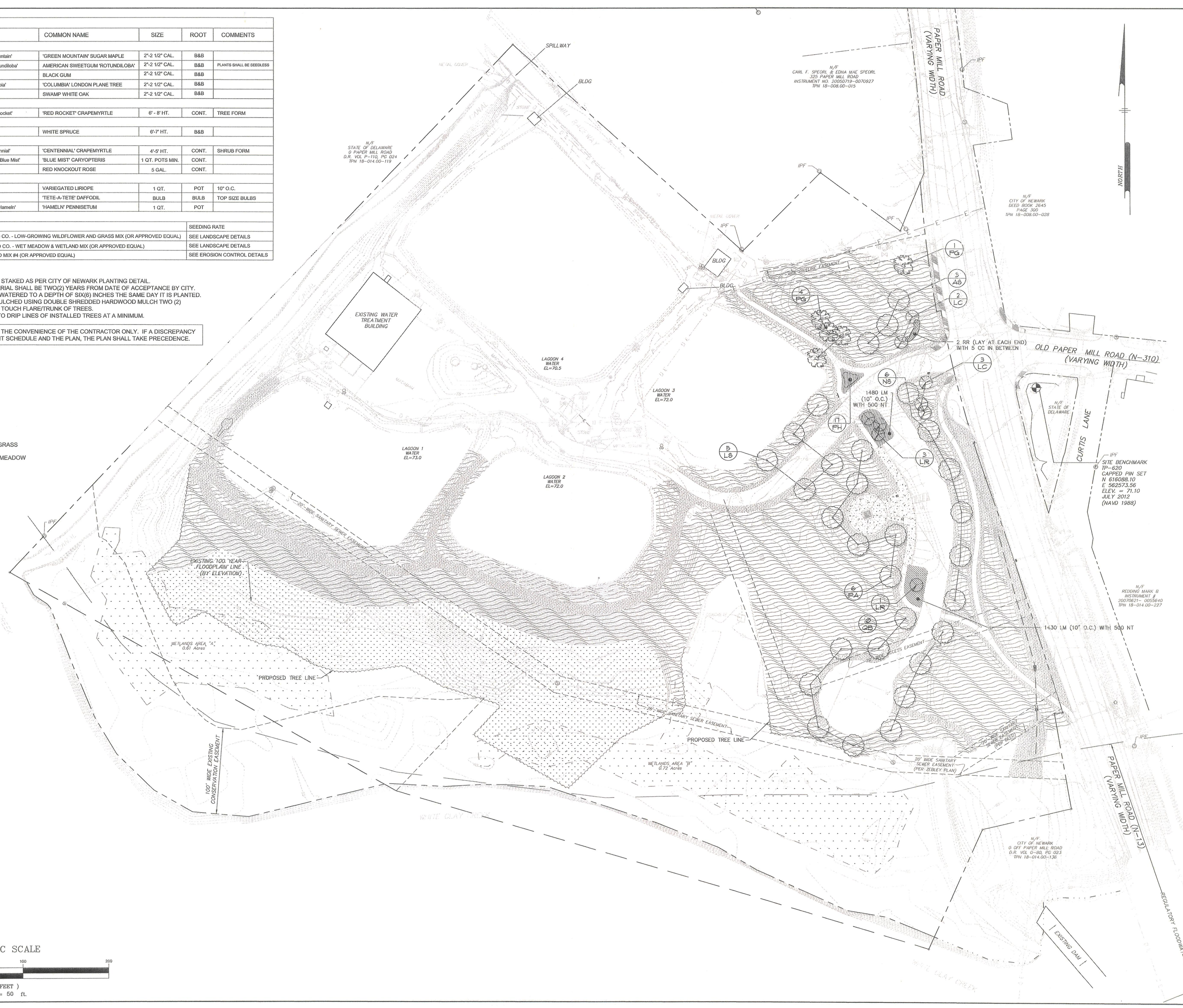
CURTIS MILL PARK
225 PAPER MILL ROAD
NEWARK, DE 19711

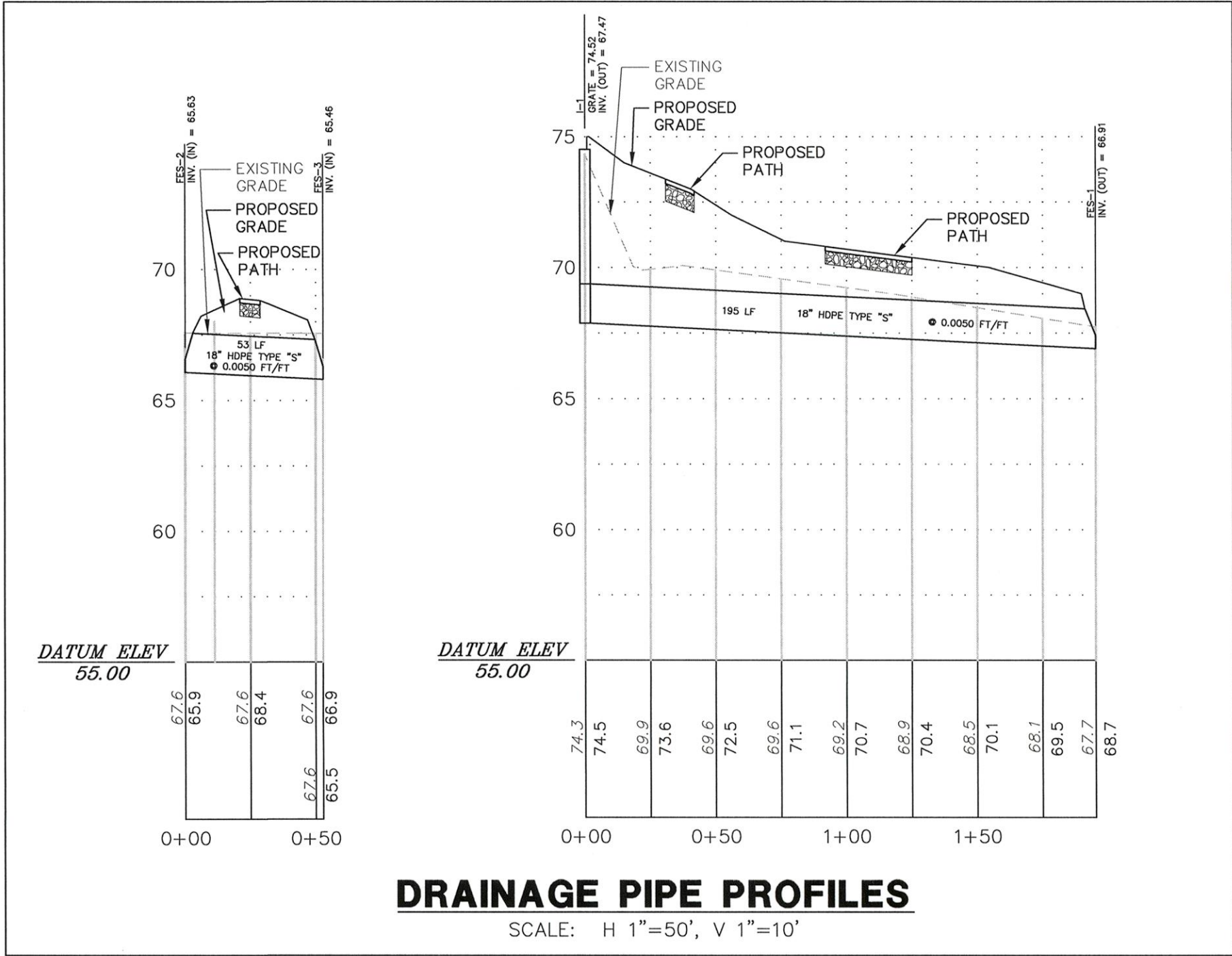
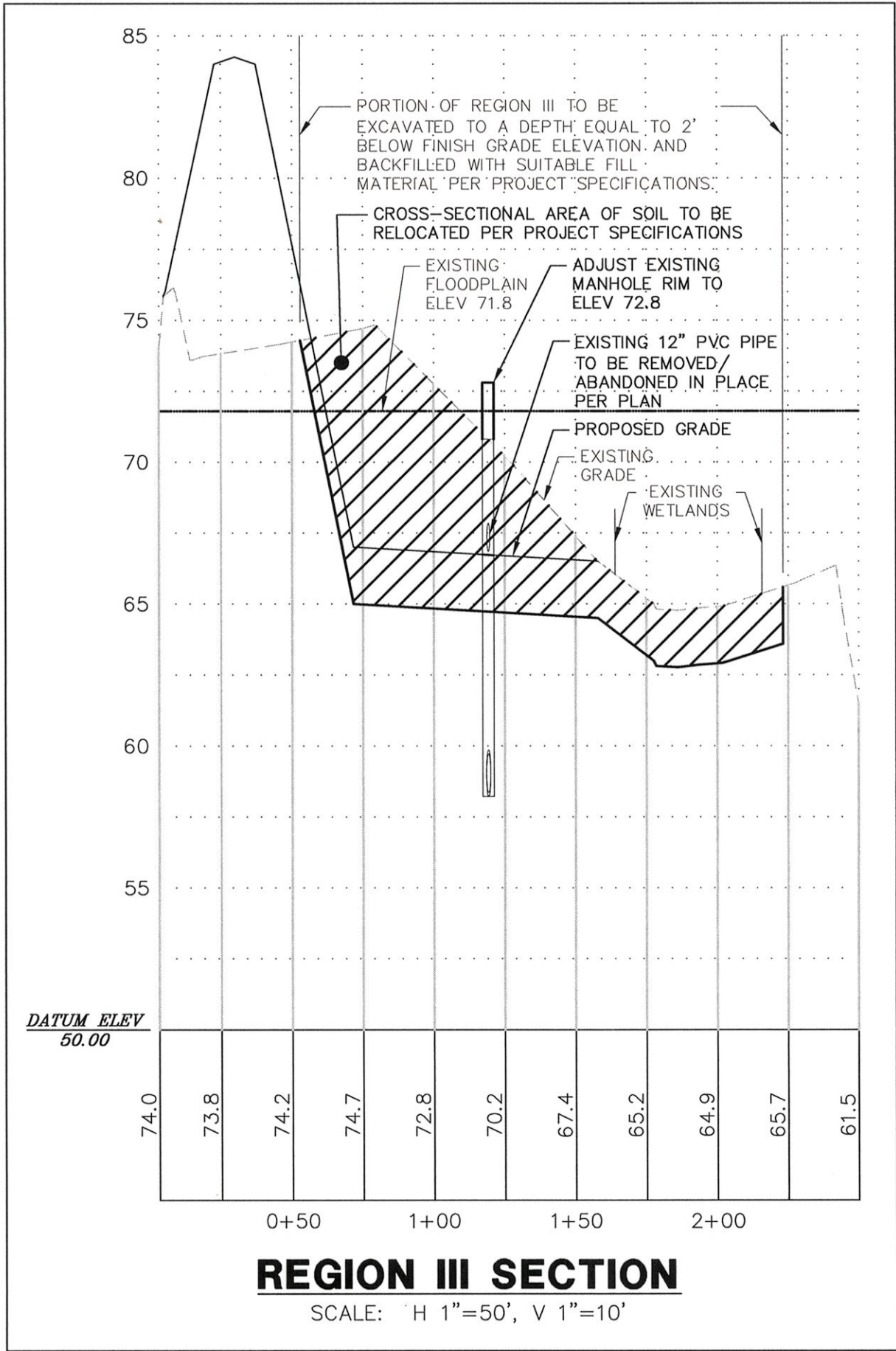
LANDSCAPING PLAN

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



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SCALE

AS NOTED

DRAWN BY

MH

DATE

1/31/13

APPROVED

WFW

JOB NO.

CNEW 1207

SHEET

7 OF 17

DRAWING NO.

CS-3501

CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

CROSS-SECTION AND PROFILES

CITY OF NEWARK

220 SOUTH MAIN STREET
NEWARK, DE 19711

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

SEAL

DEPARTMENT OF TRANSPORTATION

REGISTERED PROFESSIONAL ENGINEER

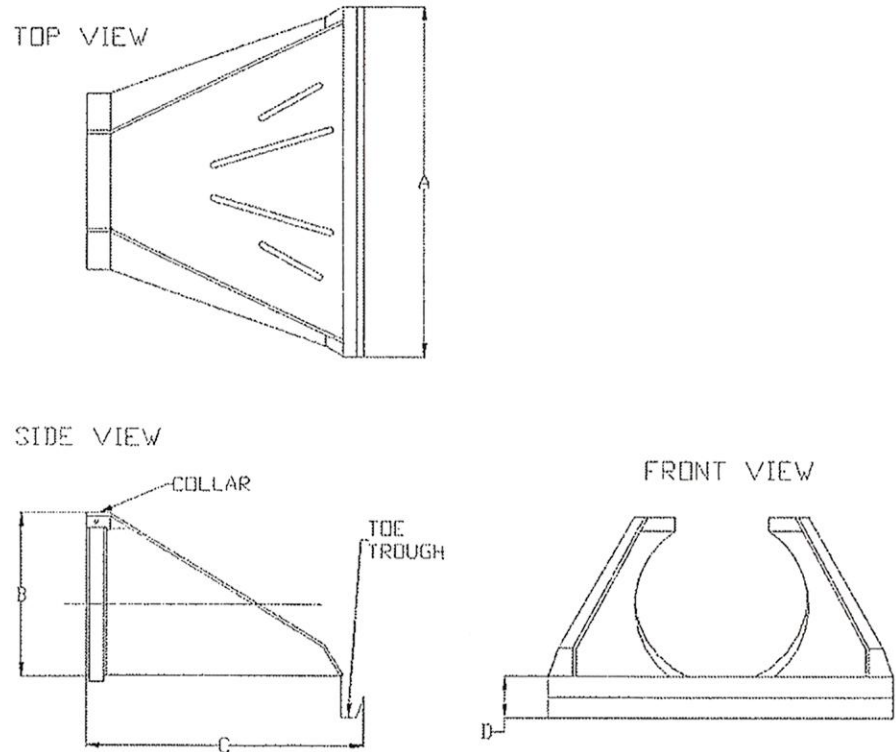
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DATE 08/29/13

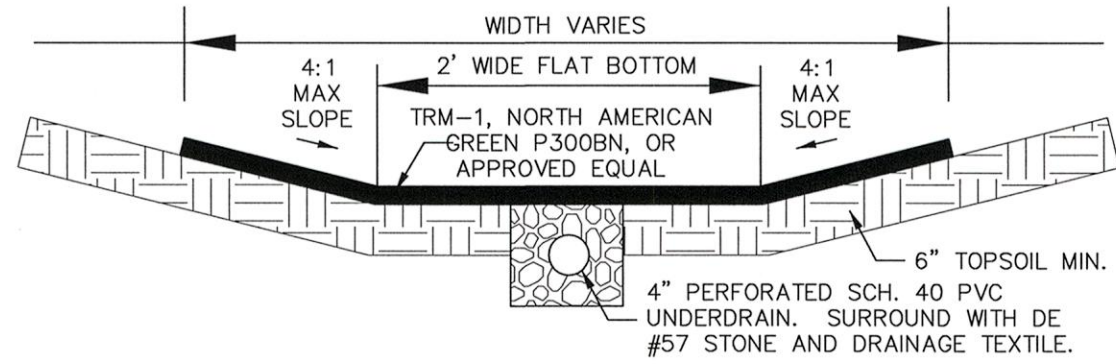
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DATE	NO.	REVISIONS	BY
08/29/13	4	PER CITY OF NEWARK COMMENTS	MH
07/17/13	3	PER DNREC COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SRA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH

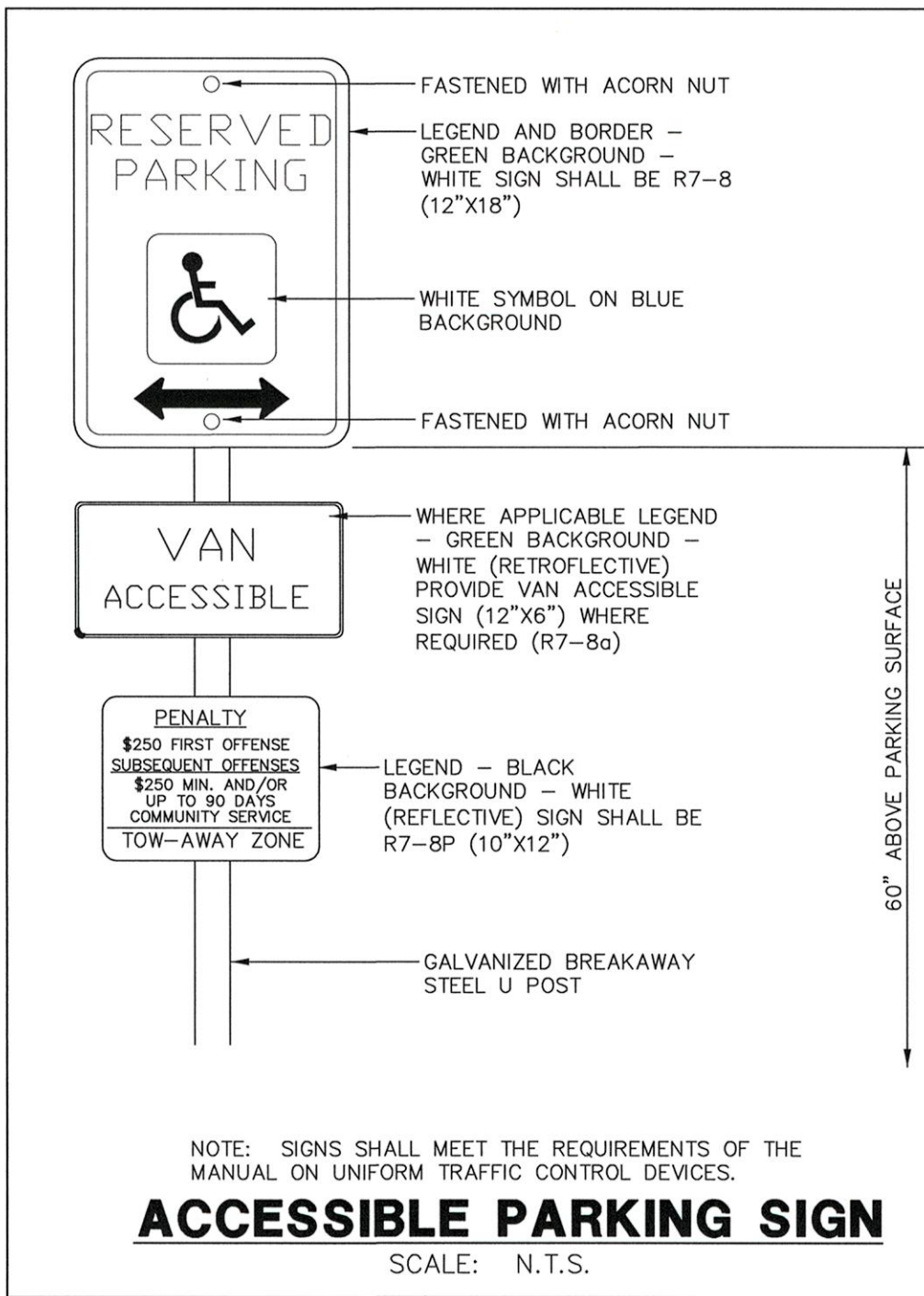
Dimensional Reference	Pipe Diameter in (mm)					
	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)
A (in)	42	42	59	59	82	82
B (in)	14	17	21	27	34	41
C (in)	34	34	48	48	58	58
D (in)	6	6	6	6	6	6



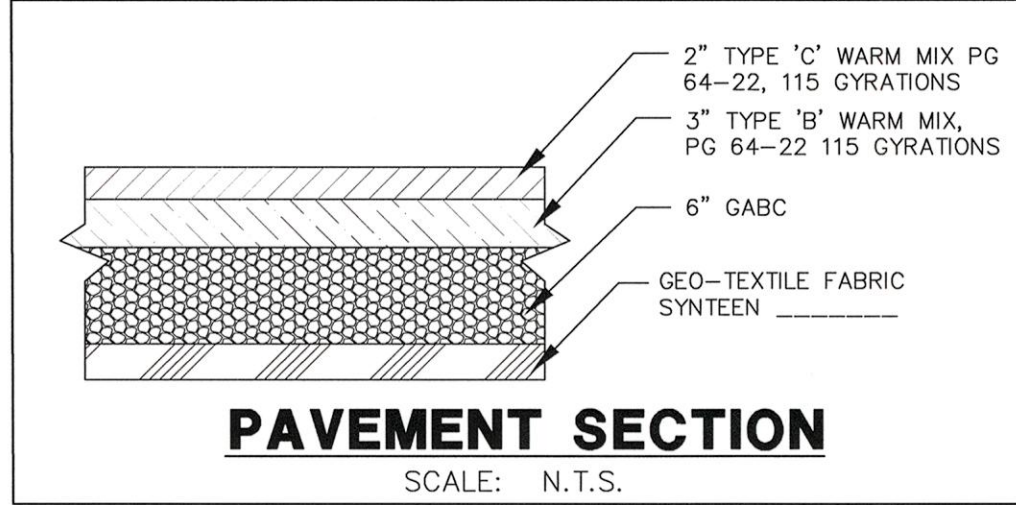
HDPE PIPE FLARED END SECTION
N.T.S.



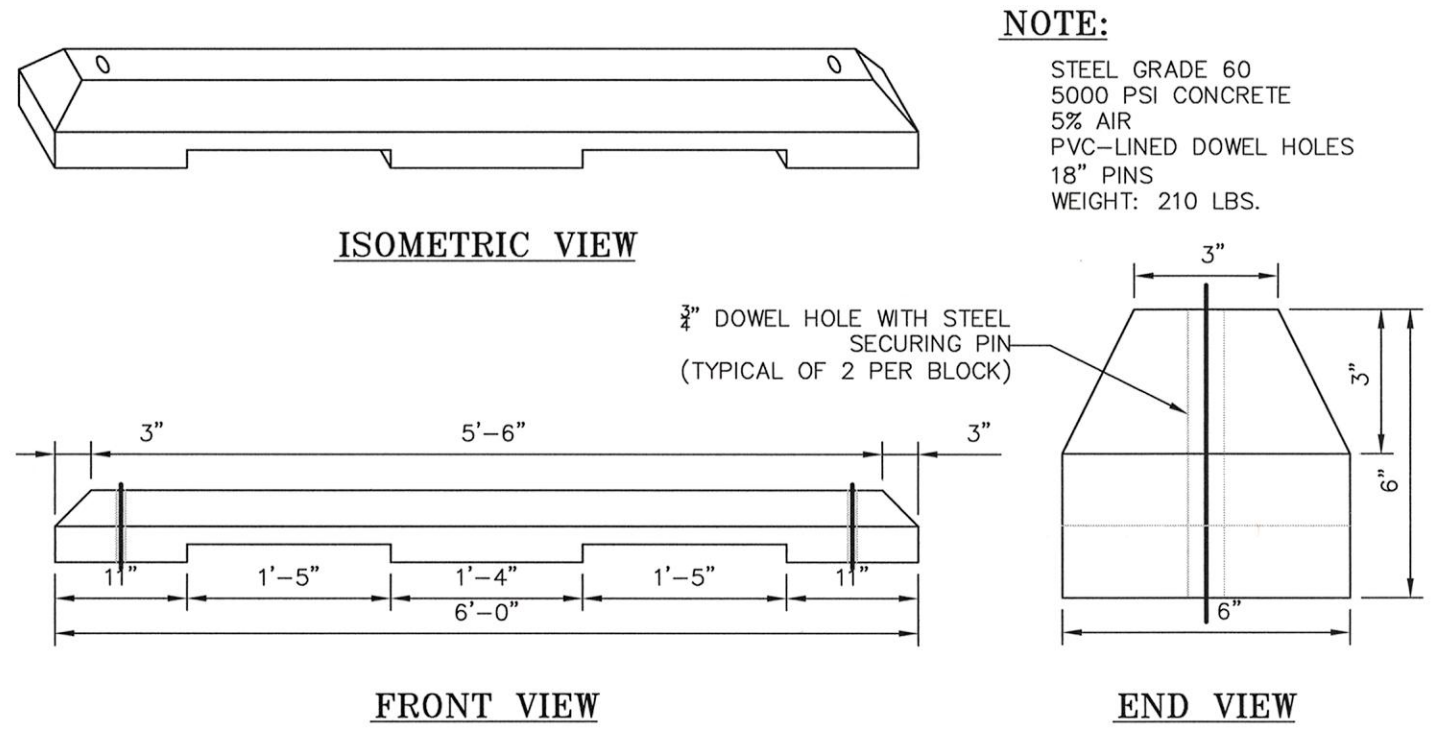
TYPICAL SWALE SECTION
SCALE: N.T.S.



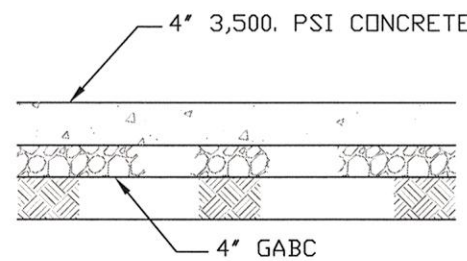
ACCESSIBLE PARKING SIGN
SCALE: N.T.S.



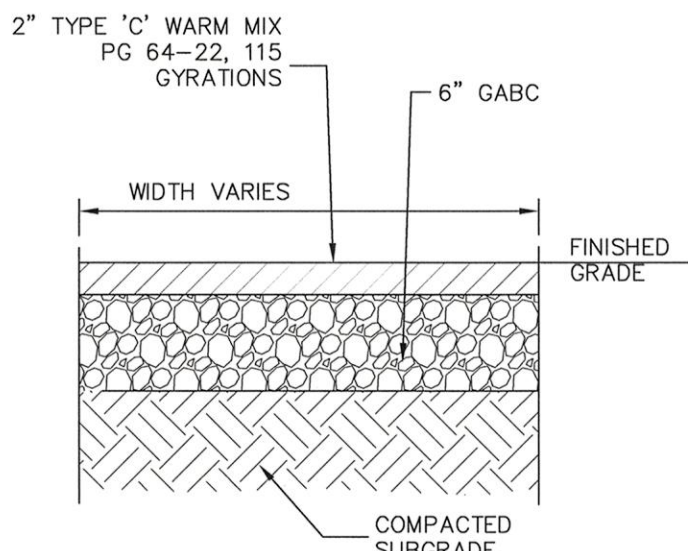
PAVEMENT SECTION
SCALE: N.T.S.



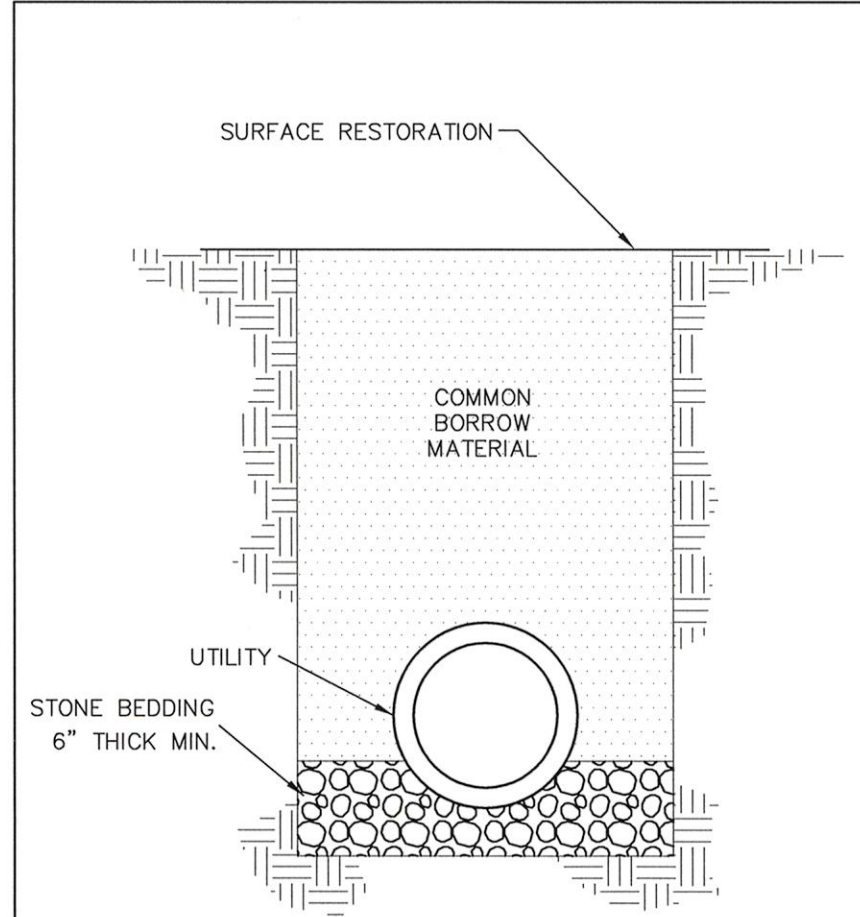
STANDARD PARKING BLOCK DETAIL
SCALE: N.T.S.



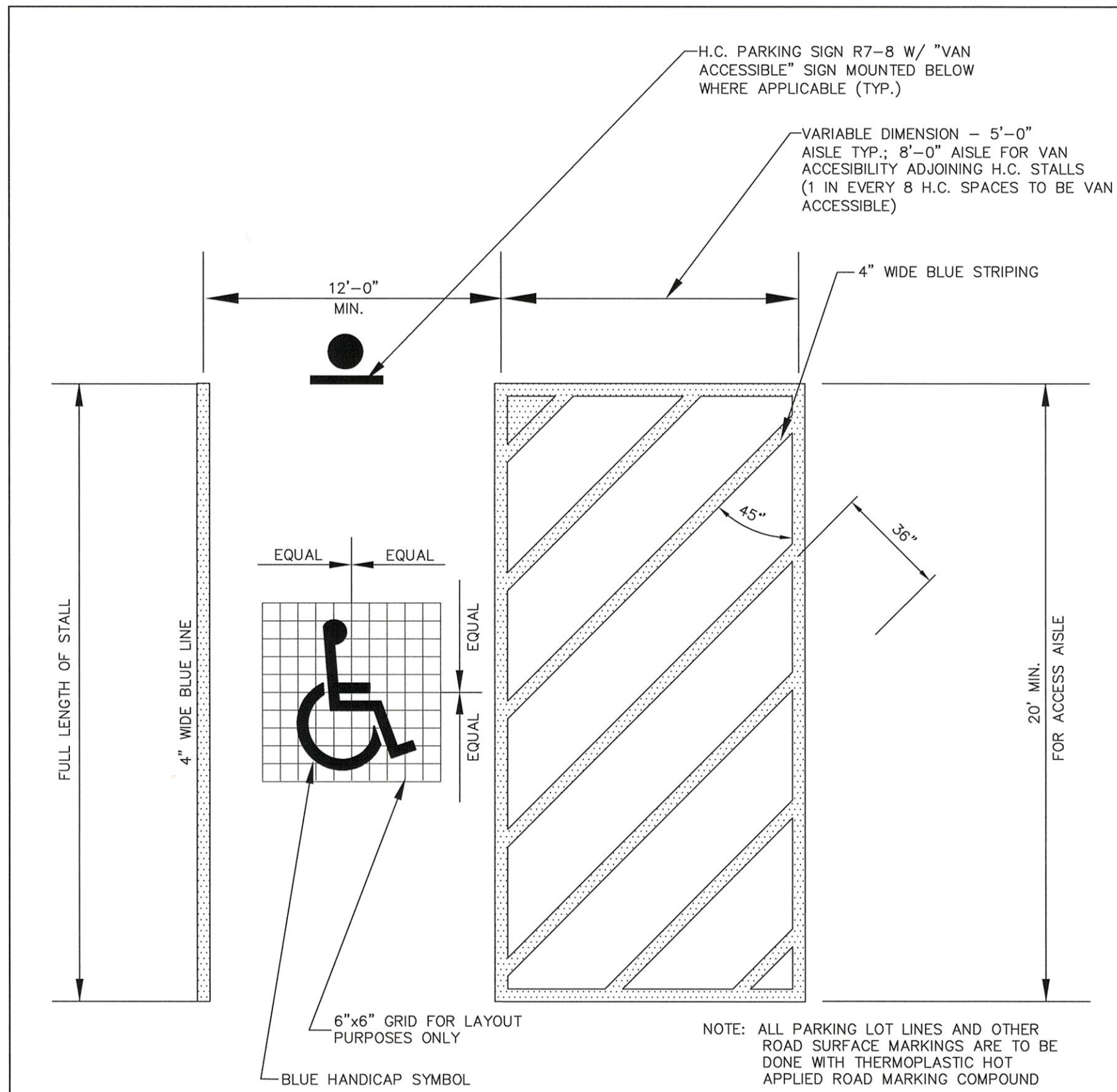
ON-SITE SIDEWALK
SCALE: N.T.S.



PAVED PATH
SCALE: N.T.S.



UTILITY TRENCH
SCALE: N.T.S.



HANDICAP PAINTED MARKINGS
SCALE: N.T.S.

Pennoni

DATE	NO.	REVISIONS	BY
09/24/13	4	PER CITY OF NEWARK COMMENTS	MH
07/17/13	3	PER DNREC COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SRA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH

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CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

SITE DETAILS

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711

NORTH	JOB NO. CNEW 1207
	SHEET 8 OF 17

SCALE AS NOTED	DRAWING NO. CS-6001
DRAWN BY MH	
DATE 1/31/13	
APPROVED WFW	



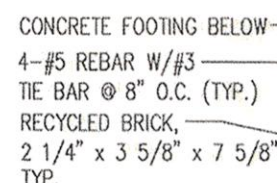
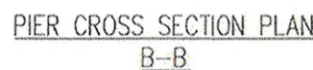
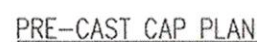
1. BRICK PAVERS SHOWN ARE STANDARD SIZES.
2. PAVER COLOR TO BE COORDINATED WITH LANDSCAPE ARCHITECT AND SHALL MATCH RECYCLED BRICK TO BE USED FOR PIERS.

6002 NOT TO SCALE



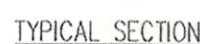
1. TOP OF CONCRETE EDGE RESTRAINT CURB TO BE FLUSH WITH CONCRETE PAVERS.
2. TOP OF CONCRETE EDGE RESTRAINT TO BE BRUSHED FOR A NON-SLIP SURFACE.
3. PROVIDE TOOLED CONTROL JOINTS SPACED 5' APART ALONG LENGTH OF CONCRETE EDGE RESTRAINT.

6002 NOT TO SCALE



1. BRICK PAVERS SHOWN ARE STANDARD SIZES.
2. PAVER COLOR TO BE COORDINATED WITH LANDSCAPE ARCHITECT AND SHALL MATCH RECYCLED BRICK TO BE USED FOR PIERS.

6002 NOT TO SCALE

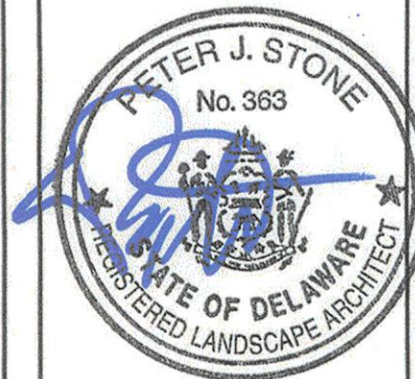


6002 NOT TO SCALE

08/29/13	3	PER CITY OF NEWARK COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SRA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH
DATE	NO.	REVISIONS	BY

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

Q. 24. 13

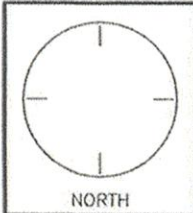


CURTIS MILL PARK

225 PAPER MILL ROAD
NEWARK, DE 19711

SITE DETAILS

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



B NO.
W 1207
9 OF 1

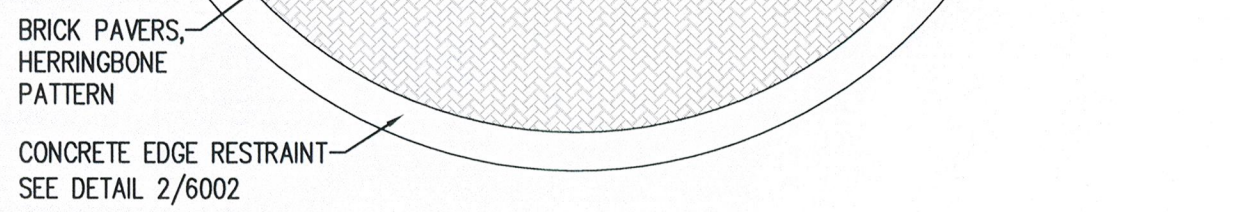
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DRAWN BY JSN	
DATE 8/21/13	
APPROVED P.J.S	CS-

CS-6002



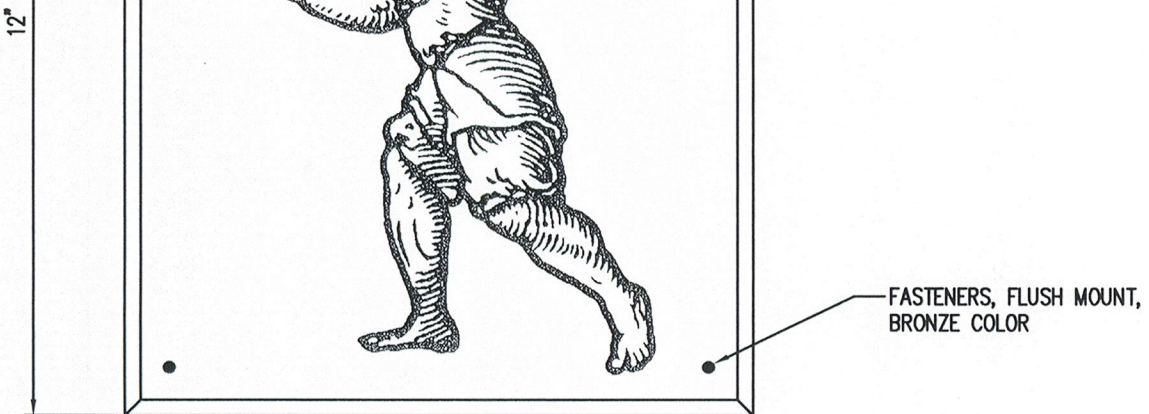
*Christiana
Executive Campus, 121 Continental Drive, Suite 207
Newark, DE 19713-4310 (302) 655-4451*

Pennoni Associates Inc.



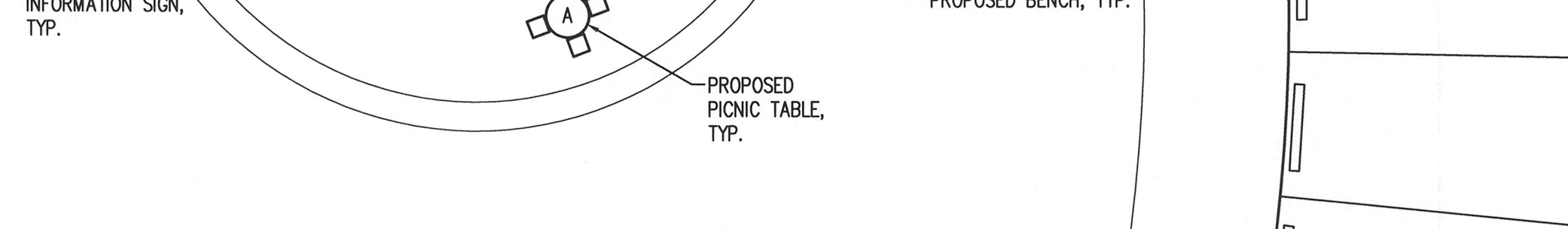
6003 SCALE: 1"=10'

SCALE: 1"=10









6003 NOT TO SCALE

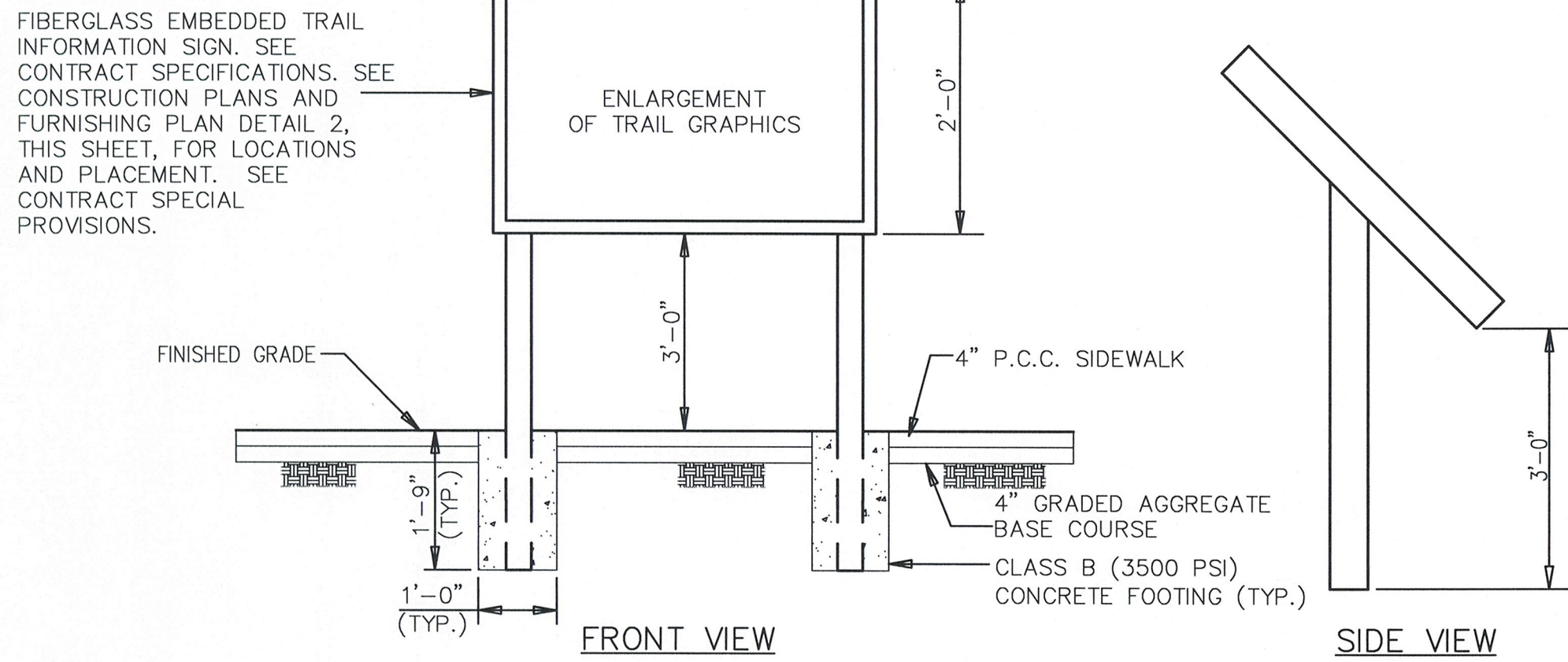
NOT TO SCALE



6003 SCALE: 1"=10'

SCALE: 1"=10'

SITE FURNISHING SCHEDULE						
KEY	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION	COLOR	NOTES
	1	PT-AIZBV	PICNIC TABLE OUTLET	46" ROUND SINGLE POST EXPANDED METAL TABLE, IN-GROUND MOUNT IN CONCRETE	BROWN	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	1	PT-WUNBB	PICNIC TABLE OUTLET	46" ADA ROUND SINGLE POST EXPANDED METAL TABLE, IN-GROUND MOUNT IN CONCRETE	BROWN	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	2	PT-MD64D	PICNIC TABLE OUTLET	6" BACKLESS EXPANDED METAL BENCH, IN-GROUND MOUNT IN CONCRETE	BROWN	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	6	BP02-IGC	VINTAGE METALWORK, INC.	HITCHING STATION	BLACK	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	3	N/A	POLIGON PARK ARCHITECTURE	TUBULAR STEEL KIOSK WITH STANDING SEAM METAL ROOF	SEE DETAIL 4/6003	INSTALL PER MANUFACTURER'S SPECIFICATIONS
	2	N/A	N/A	TAPERED BRICK PIER WITH PRE-CAST CAP	SEE DETAIL 4/6002	SEE DETAIL 4/6002



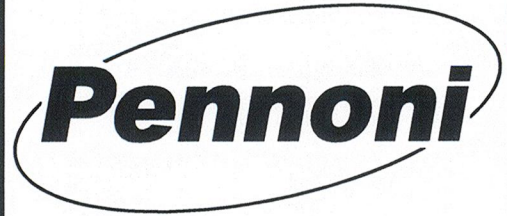
6003 NOT TO SCALE

NOT TO SCALE

1. FOR SPECIFIC LOCATIONS SEE SITE FURNISHING PLAN DETAIL 2, THIS SHEET.
2. TRAIL INFORMATION SIGN AND MAP ARE PAID FOR UNDER ITEM 60 - SITE FURNISHINGS.
3. FRAME SHALL BE BLACK IN COLOR.

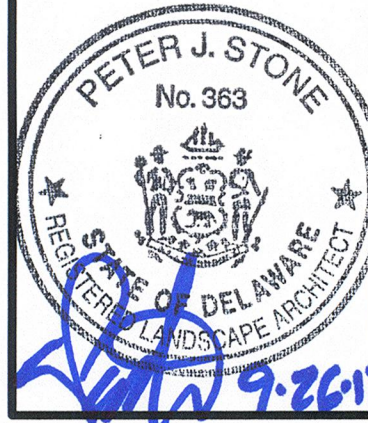
MATERIALS NOTES:

1. CONCRETE - ALL CONCRETE SHALL CONFORM TO ACI 318-05 BUILDING CODE REQUIREMENTS. FINE AGGREGATE FOR ALL CONCRETE SHALL BE NATURAL SAND AND SHALL CONFORM TO ASTM C-33.
2. STONE AGGREGATE CONCRETE - COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C-33. CONCRETE STRENGTH AT 28 DAYS FOR FOOTINGS SHALL BE 3,000 PSI.
3. MORTAR - MORTAR SHALL BE TYPE 'S' MORTAR FOR ABOVE GRADE (1,900 PSI) AND TYPE 'M' FOR BELOW GRADE (2,500 PSI).
4. RECYCLED BRICK: CONTRACTOR SHALL USE RECYCLED BRICK FROM PREVIOUS STRUCTURE THAT HAS BEEN SET ASIDE FOR THE PIER CONSTRUCTION.
5. PAVER BRICK - PAVER BRICK SHALL BE CONCRETE MASONRY UNITS FROM HANOVER ARCHITECTURAL PRODUCTS, ARCHITECTURAL PREST® PAVERS OR APPROVED EQUAL. COLOR OF PAVERS SHALL MATCH THE RECYCLED BRICK TO BE USED FOR THE PIERS. PAVERS SHALL BE 3-5/8" X 2-1/4" X 7-5/8".
6. PRECAST CAP - PRECAST CAP SHALL BE CONCRETE. CONTRACTOR SHALL SUPPLY A SHOP DRAWING PRIOR TO FABRICATION AND INSTALLATION OF THE PRECAST TOPS. SHOP DRAWING SHALL INCLUDE DIMENSIONS, COLORS, AND ATTACHMENT DETAILS FOR CAP. PRECAST CAP SHALL BE A LIGHT COLOR TO COMPLEMENT BRICK MORTAR.
7. WALL TIES - WALL TIES FOR BRICK PIER SHALL BE PROVIDED AS NOTED ON THE DETAILS.
8. BRONZE PLAQUE - CONTRACTOR SHALL PROVIDE SHOP DRAWING FOR PLAQUE BASED ON DETAIL. SHOP DRAWING SHALL INCLUDE FINISHES, COLORS, AND ATTACHMENT DETAILS. GRAPHIC AND TEXT ON PLAQUE SHALL BE RAISED.
9. BLUESTONE - BLUESTONE PAVERS SHALL BE CUT TO 12" X 18", AND SHALL BE 2" THICK. PAVERS SHALL BE RECTANGULAR IN SHAPE WITH 90 DEGREE CORNERS, AND SHALL HAVE A SMOOTH SURFACE.
10. REINFORCEMENT - ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM 615, GRADE 60. FABRICATE AND PROVIDE STANDARD SUPPORTING ACCESSORIES IN ACCORDANCE WITH PROVISIONS OF ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES. REINFORCING BARS SHALL HAVE A MINIMUM OF 3" OF CONCRETE COVER ON ALL SIDES.
11. CONTRACTOR TO PROVIDE SAMPLES OF ALL MATERIALS TO BE INSTALLED PRIOR TO INSTALLATION FOR OWNER AND LANDSCAPE ARCHITECT REVIEW AND APPROVAL.
12. CMU - MASONRY UNITS SHALL BE ASTM C90, GRADE N, TYPE 1, WITH MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI. ALL CONCRETE MASONRY UNITS SHALL BE FULL GROUTED AND REINFORCED AS SHOWN ON DETAILS.
13. GROUT - MASONRY GROUT SHALL BE A HIGH SLUMP, SMALL AGGREGATE CONCRETE MIX. GROUT TO CONFORM TO ASTM C476 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
14. CONCRETE EXPOSED TO FREEZE/THAW CONDITIONS AND/OR WEATHER (INCLUDING EXTERIOR FOOTINGS) SHALL HAVE 4%-6% AIR-ENTRAINMENT IN ACCORDANCE WITH ACI.



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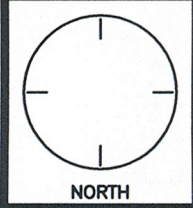
CURTIS MILL PARK

225 PAPER MILL ROAD
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SITE DETAILS

CITY OF NEWARK
OFFICE OF THE CITY CLERK

20 SOUTH MAIN STREET
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JOB NO.
CNEW 1207

SHEET 10 OF 17

SCALE
AS NOTED
DRAWN BY
JSN

DATE _____

8/21/13

APPROVED

DRAWING NO.

CS-6003

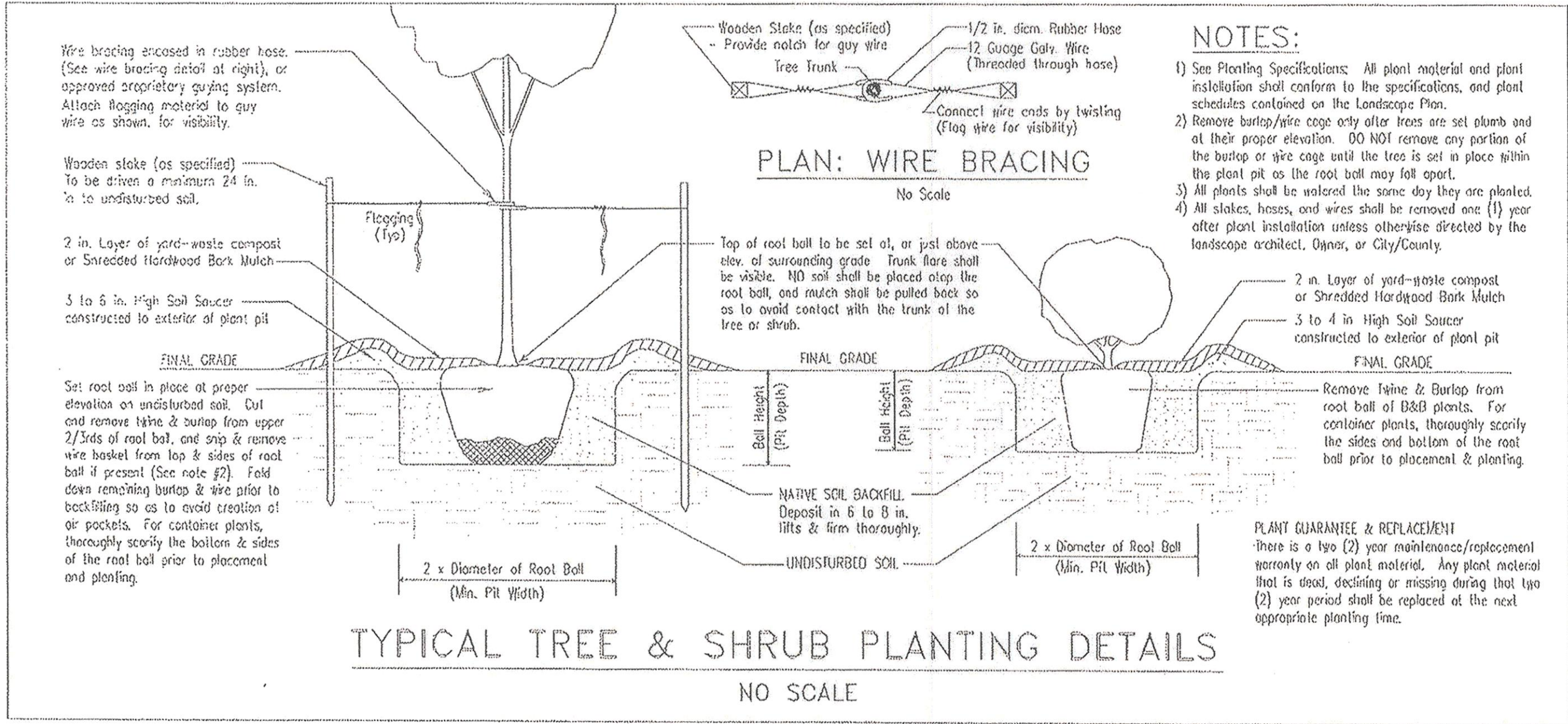
PLANTING NOTES

- ALL PLANT LOCATIONS SHALL BE STAKED IN THE FIELD AND LOCATIONS APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- TOPSOIL WITH A QUALITY ORGANIC SOIL AMENDMENT SHALL BE USED FOR ALL PLANTING AND SEEDING OPERATIONS.
- NOTIFY ALL UTILITY COMPANIES AND LOCATE ALL UTILITIES PRIOR TO EXCAVATING PLANT PITS. PLANT LOCATIONS MAY BE ADJUSTED IN THE FIELD TO AVOID INTERFERENCE WITH UNDERGROUND UTILITIES.
- SHOULD ANY DISCREPANCY ARISE BETWEEN THE PLANTING PLAN AND THE PLANTING SCHEDULE, THE PLAN SHALL GOVERN AS TO THE QUANTITY OF PLANT MATERIAL.
- ALL PLANT MATERIAL SHALL BE OF NURSERY STOCK QUALITY AS DEFINED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. ALL PLANT MATERIAL SHALL BE GUARANTEED TO LIVE AT LEAST 18 MONTHS FOLLOWING INSTALLATION.
- ALL NON-BIODEGRADABLE ROOT WRAPPING TO BE REMOVED COMPLETELY BEFORE PLANTING.
- ALL SHADE TREES TO BE PRUNED OF SIDE BRANCHES TO A HEIGHT OF 6' ABOVE GRADE EXCEPT WHERE NOTED IN PLANT SCHEDULE.
- ALL PLANT MATERIAL SHALL BE APPROVED UPON ARRIVAL TO THE SITE, UNLESS OTHERWISE NOTIFIED.
- PROPOSED PLANT MATERIAL MAY BE SUBSTITUTED BY SIMILAR PLANTS PRIOR TO INSTALLATION, SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT.
- DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO WORK AREA CONTRACTOR IS RESPONSIBLE FOR FINE GRADING AND SEEDING ALL DISTURBED AREAS.
- ALL PLANTS SPACED 7" O.C. OR CLOSER SHALL BE IN CONTINUOUS MULCHED BEDS.
- SEED ALL DISTURBED AREAS WITH REQUIRED SEED MIX (SEEDING MIX SCHEDULE & SEEDING NOTES).
- PLANTING SHALL BE DONE APRIL 15TH THRU MAY 31ST OR AUGUST 17TH THRU OCTOBER 15TH
- CONTRACTOR IS REQUIRED TO CONFIRM ALL TREES TO BE REMOVED IN ORDER TO PROPERLY CONSTRUCT THE PROPOSED PROJECT PRIOR TO REMOVAL. CONTRACTOR TO DOCUMENT SPECIES AND DBH, COORDINATE WITH OWNER/ENGINEER FOR APPROVAL PRIOR TO REMOVAL. PROPOSED TREE QUANTITIES MAY BE REVISED UPON REVIEW OF TOTAL TREE COUNT.

SEEDING NOTES

- SEED ALL AREAS DISTURBED BY CONSTRUCTION NOT OTHERWISE CONTAINING PLANTING BEDS, SIDEWALKS, BUILDINGS, ETC.
- BEFORE SEEDING, CONTRACTOR SHALL PROVIDE SOIL TESTS, AND APPLICATIONS OF FERTILIZER AND/OR GROUND LIMESTONE SHALL BE MADE PER SOIL TEST RECOMMENDATIONS. INCORPORATE FERTILIZER OR LIMESTONE INTO TOPSOIL TO A 2" DEPTH.
- PERFORM ALL FINISH GRADING, WITHIN AREAS OF DISTURBANCE, NECESSARY TO BRING SITE TO REQUIRED FINISHED ELEVATIONS. FINISH GRADING SHALL CONSIST OF PREPARING SUBGRADE AND SPREADING TOPSOIL READY FOR SEEDING OPERATIONS.
- SUBGRADE SHALL BE LOOSENED AND GRADED BY HARROWING, DISCING, OR DRAGGING, AS DICTATED BY THE CONDITION OF THE SUBGRADE. THE ENTIRE SUBGRADE SHALL THEN BE RAKED AND ALL STONES OVER 1-1/2", GRADE STAKES, RUBBISH AND GENERAL DEBRIS REMOVED.
- ALL UNDISTURBED PORTIONS OF THE SITE THAT ARE TO RECEIVE SEEDING SHALL HAVE SURFACE LOOSENED BY HARROWING OR DISCING. ALL MECHANICAL OPERATIONS MUST BE KEPT OUTSIDE OF AREAS DELINEATED BY TREE PROTECTION FENCING.
- TOPSOIL SHALL BE UNIFORMLY SPREAD WITH BLADE GRADER, OR BY ANY OTHER APPROVED METHOD, TO A MINIMUM DEPTH OF 6 INCHES TO PERMIT 1 INCH OF SETTLEMENT. CORRECT ANY SURFACE IRREGULARITIES TO PREVENT FORMATION OF LOW SPOTS AND POCKETS THAT WOULD RETAIN WATER. PRIOR TO FINE GRADING, REMOVE ALL EXISTING ANNUAL TYPE VEGETATION.
- SEEDING SHALL BE COMPLETED USING THE HYDROSEEDING OR HYDRAULIC BROADCASTING OF PREPARED MATERIAL AT THE FOLLOWING RATES PER ACRE:
 - WATER; AS SPECIFIED.
 - 1,500 POUNDS OF WOOD CELLULOSE, PLUS 15% FOR SLOPES 5% AND STEEPER.
 - LIME; QUANTITY AS REQUIRED TO ACHIEVE pH OF 6.5.
 - SOIL STABILIZER OF TYPE AND AT RATE RECOMMENDED BY THE MANUFACTURER.
 - SEED MIX; AS SPECIFIED.
- HYDRAULIC SEEDING SHALL BE APPLIED WHEN WIND IS FIVE MILES PER HOUR OR LESS. PREPARED BED SHALL BE IN A MODERATELY DRY CONDITION DURING SEEDING WITH A MINIMUM THREE INCH DEPTH OF LOOSE FLUFFY SOIL. HYDRO SEED SHALL BE MIXED INTO TOP ONE INCH OF SOIL BY DIRECTING HYDRO-MULCHING NOZZLED AT SOIL SURFACE. BROADCAST SPRAYING OF SEED SHALL NOT BE ACCEPTABLE UNLESS SEED IS LATER RAKED INTO TOP ONE INCH OF SURFACE SOIL FOR APPROPRIATE SEED SOIL CONTACT.
- ADD GREEN COLORING AGENT TO MULCH IN ORDER TO GUAGE ADEQUATE COVERAGE.
- SOW SEED AT THE RECOMMENDED SEEDING RATE AS SHOWN IN THE SEEDING MIX SCHEDULE.
- SEED SHALL BE APPLIED APRIL 15TH THRU MAY 31ST OR AUGUST 17TH THRU OCTOBER 15TH.
- USE MECHANICAL SEEDING EQUIPMENT WHEN HYDRAULIC SEEDING IS NOT PRACTICAL DUE TO CLOSENESS OF BUILDINGS, ETC.
- AFTER SEEDING APPLICATION, WOOD CELLULOSE FIBER SHALL BE APPLIED HYDRAULICALLY AT A NET RATE DRY WEIGHT OF 1,500 LBS PER ACRE OR AT RATES RECOMMENDED BY THE MANUFACTURER. MULCH ALL SEEDED AREAS WITH CLEAN STRAW FREE OF SEEDS, WEEDS, OR INVASIVE NUISANCE SPECIES.
- ON ALL SLOPES 3:1 OR GREATER, USE AN ORGANIC SOIL STABILIZER SUCH AS 'CON-TACK' OR EQUAL AT THE RATE OF 25 LBS PER 1,000 GALLONS OR AT RATES RECOMMENDED BY THE MANUFACTURER.
- KEEP NEWLY SEEDDED GRASS AREAS MOISTENED DURING SEED GERMINATION AND UNTIL THE GRASS COVERS AT LEAST 75% OF THE SEEDDED AREAS TO A HEIGHT OF 2 TO 3 INCHES.
- ALL AREAS AND SPOTS, WHICH DO NOT SHOW A PROMPT CATCH OF GRASS, SHALL THEN BE RE-SEEDDED, AND THE OPERATION REPEATED UNTIL COMPLETE COVERAGE IS OBTAINED.
- OVERSEEDING WILL BE NECESSARY DURING SUBSEQUENT GROWING SEASON TO ENSURE REQUIRED COVERAGE.

CITY OF NEWARK
TREE & SHRUB PLANTING DETAILS



Planting details courtesy of:
Burcham & Associates Landscape Architects, Wilmington, DE

NOTES:
SET PLANTS PLUMB, AND FACE TO GIVE BEST APPEARANCE TO ADJACENT AREAS.
DO NOT PRUNE EVERGREENS EXCEPT TO REMOVE DEAD AND BROKEN BRANCHES.
SET TOP OF ROOT BALL ABOVE ADJACENT FINISH GRADE AT A HEIGHT OF 15-20% OF ROOT BALL.
NEED FOR PRUNING TO BE DETERMINED BY LANDSCAPE ARCHITECT
THIN BRANCHES AND FOLIAGE (NOT ALL BRANCH TIPS) BY 1/3, RETAINING NORMAL PLANT SHAPE. NEVER CUT LEADER.
DO NOT USE TOPSOIL SAUCER.
3" MULCH.
REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL, OR WITH CONTAINER PLANTS REMOVE POTS AND SPLIT BALLS AS SPECIFIED.
SPECIFIED PLANT MIX: 1/5 PEAT, MOSS AND 1/5 SAND TO 3/5 TOPSOIL - LIGHTLY TAMPED.
PLANTS TO PLACED ON UNDISTURBED SUBGRADE
BALLED AND BURLAPPED SHRUBS.
VARIED
BARE ROOT OR CONTAINER SHRUBS.

GROUPED SHRUB PLANTING DETAIL

NOT TO SCALE

FILTER STRIP INSTALLATION AND MAINTENANCE SPECIFICATIONS

STANDARDS FOR FILTER STRIP TOPSOIL

IF POSSIBLE, THE SOIL UNDERLYING FILTER STRIPS SHALL BE AS WELL AERATED AND UNCOMPACTED AS POSSIBLE. HOWEVER, BY THEIR PROXIMITY TO IMPERVIOUS SURFACES, SOILS UNDER MOST FILTER STRIPS ARE LIKELY TO BE COMPLETELY DISTURBED AND HEAVILY COMPACTED. SUCH EXCESSIVE COMPACTION MUST BE ALLEVIATED BY USING A CHISEL PLOW, RIPPER OR SUBSOILER. ADEQUATE TOPSOIL MUST ALSO BE RETURNED TO PROVIDE ENOUGH ORGANIC MATTER AND MYCORRHIZAE NECESSARY FOR PLANTS TO FLOURISH. A MINIMUM OF 6 INCHES OF TOPSOIL SHALL BE SPECIFIED IN THE PLANS FOR FILTER STRIPS. THE TOPSOIL SHALL BE DISKED IN TO BLEND IT WITH THE SUBSOIL TO REDUCE AN ABRUPT CHANGE IN SOIL TYPES AND PROMOTE INFILTRATION.

IF POSSIBLE, FILTER STRIP TOPSOIL SHALL BE LUMED TO A NEUTRAL PH, FERTILIZED AS SET FORTH BELOW, AND MEET THE FOLLOWING GRADING RECOMMENDATIONS:

Property	Recommendation	Property	Recommendation
pH	6.0-7.0	Organic Matter	1.0-4.0%
Mg	35 lb./ac.	Sand	30-80%
Po	75 lb./ac.	Silt	30-60%
K	85 lb./ac.	Clay	5-35%

STANDARDS FOR FILTER STRIP VEGETATION

FILTER STRIPS REDUCE POLLUTANT LOADS THROUGH TWO MECHANISMS: FILTERING THROUGH THE STANDING STALKS OF THE VEGETATION AND INFILTRATION INTO THE SOILS UNDERNEATH. OF THESE TWO MECHANISMS, FILTERING IS PREDOMINANT. WHILE A DENSE STAND OF COOL SEASON SOIL-TYPE GRASSES COULD BE SPECIFIED IN LANDSCAPED SETTINGS, RECENT RESEARCH INDICATES THAT A DENSE NATIVE MEADOW STAND CAN BE SIMILARLY EFFECTIVE. IT IS IMPORTANT THAT THE PLANTINGS BE AS DENSE AS POSSIBLE FOR THE INITIAL 15 FEET WHERE FILTERING IS MOST IMPORTANT. TURF IS THE OBVIOUS CHOICE FOR MANY FILTER STRIPS, SINCE THEY ARE LAWN AREAS THAT HAPPEN TO BE SPECIFICALLY DESIGNED TO INTERCEPT RUNOFF FROM BUILDINGS AND PARKING AREAS.

HOWEVER, NATIVE WARM SEASON GRASSES HAVE MUCH DEEPER ROOTING SYSTEMS THAN TURF-TYPE COOL-SEASON GRASSES. THIS GREATLY PROMOTES INFILTRATION AND RECHARGE OF RUNOFF INTO GROUNDWATER. THERE ARE ALSO SEVERAL NATIVE GRASSES THAT FORM A DENSE STAND AT MATURITY. WHERE POLLUTANT LOADS ARE NOT EXCESSIVE AND INFILTRATION IS DESIRED, NATIVE WARM SEASON GRASSES ARE PREFERABLE.

STANDARDS FOR FILTER STRIP INSPECTION AND MAINTENANCE

THERE SHALL BE SEMI-ANNUAL REGULAR INSPECTIONS OF THE FILTER STRIP; ONCE BEFORE NEW GROWTH EMERGES IN THE SPRING, AND ONCE IN THE FALL. THE FILTER STRIP SHALL ALSO BE INSPECTED AFTER SEVERE STORM EVENTS AND CLEARED OF ANY AND ALL FOREIGN DEBRIS AND TRASH THAT MAY INHIBIT OVERALL FUNCTION. EXCESSIVE SEDIMENTS AT THE LIP OF THE EDGE OF PAVEMENT SHALL BE CLEANED UP BY HAND WITH FLAT SHOVELS EVERY SPRING AND AFTER LARGE STORMS.

THE PRIMARY MAINTENANCE MEASURE FOR FILTER STRIPS INVOLVES REGULAR MOWING OF THE TURF TO MAINTAIN A DENSE STAND. IN THE PEAK GROWING SEASON, THIS OCCURS EVERY WEEK OR SO. A MULCHING MOWER SHALL BE USED TO ENSURE THAT NUTRIENTS ARE RECYCLED, AND THAT EXCESSIVE CLIPPINGS DO NOT BUILD UP TO SMOOTHER THE TURF AND INHIBIT INFILTRATION. FOR WARM SEASON GRASSES, THE PREVIOUS SEASON'S STALKS SHOULD BE CUT DOWN TO NO LOWER THAN 12 INCHES IN THE EARLY SPRING (MID MARCH), BEFORE NEW GROWTH EMERGES.

THE SOIL SHALL BE TESTED ANNUALLY TO ENSURE PROPER pH AND FERTILITY. IF REQUIRED, FERTILIZER SHALL ONLY BE APPLIED IN THE FALL. NOTE THAT MOST RUNOFF PROVIDES ALL THE NUTRIENTS NORMALLY REQUIRED, AND EXCESSIVE NUTRIENTS CAN PROMOTE AGGRESSIVE WEEDS IN WARM SEASON GRASS STANDS. TILTH IN SOILS CAN ALSO BE IMPROVED BY AERATING, PARTICULARLY IF THE SOILS ARE COMPACTED. ANNUAL DETHATCHING SHALL BE DONE TO IMPROVE TURF HEALTH.

FILTER STRIP SEEDING SPECIFICATIONS

PERMANENT SEEDING MIXTURE TO BE: DNREC PERMANENT SEED MIX #4 (SEE EROSION CONTROL DETAILS).

- CONTRACTOR TO VERIFY SEED MIX WITH CERTIFIED CONSTRUCTION REVIEWER AND DNREC PRIOR TO INSTALLATION.
- OPTIMAL PLANTING SEASON: SEE EROSION CONTROL DETAILS
- SEED RATE: SEE EROSION CONTROL DETAILS. APPLY EVENLY IN TWO INTERSECTING DIRECTIONS. RAKE IN LIGHTLY.
- DO NOT SEED AREAS FOLLOWING RAIN, WHEN GROUND IS TOO DRY, OR WHEN WINDS ARE OVER 12 MPH.
- ROLL SEEDDED AREA WITH ROLLER NOT EXCEEDING 65 POUNDS PER FOOT OF WIDTH FOR NECESSARY SEED SOIL CONTACT.

FILTER STRIP #	WIDTH (FT)	LENGTH	SLOPE(ft/ft)
1	8.0'	443'	0.0200
2	8.0'	132'	0.0200
3	8.0'	230'	0.0200

IMPERVIOUS SOURCE AREA WITH SHEET FLOW RUNOFF

2" DROP FROM TOP OF PAVEMENT

SSM-1, NORTH AMERICAN GREEN-S75BN OR APPROVED EQUAL

FILTER STRIP VEGETATION - SEE LANDSCAPE PLAN FOR SEED MIX AND LOCATIONS, SEE PROJECT SPECIFICATIONS AND THIS SHEET FOR PLANTING RATES, SITE PREPARATION PROCEDURES, AND MAINTENANCE REQUIREMENTS.

2.0%

6" (MIN.) TOPSOIL

DISC OR ROTOTILL TOPSOIL TO BLEND INTO SUBSOIL

SUBSOIL - ROTOTILL IF COMPACTED

TYPICAL FILTER STRIP CROSS-SECTION

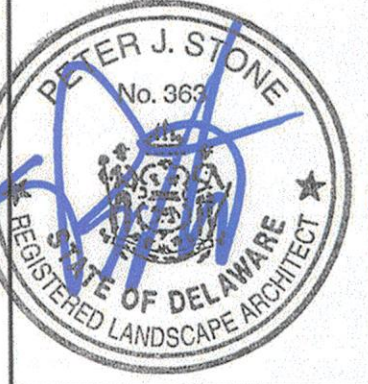
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Pennoni

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225 PAPER MILL ROAD
NEWARK, DE 19711

LANDSCAPING DETAILS

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



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SHEET 11 OF 17

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CS-6601

EROSION AND SEDIMENT CONTROL NOTES:

1. THE DNREC SEDIMENT AND STORMWATER MANAGEMENT PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE DNREC.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PROVIDED TO THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
7. APPROVED PLANS REMAIN VALID FOR 3 YEARS FROM THE DATE OF APPROVAL.
8. POST CONSTRUCTION VERIFICATION DRAWINGS ARE TO BE SUBMITTED TO THE DISTRICT WITHIN 60-DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION.
9. APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
10. THE NOTICE OF INTENT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NPDES GENERAL PERMIT FOR THIS PROJECT IS # [REDACTED] AT ANY TIME THE OWNERSHIP FOR THIS PROJECT CHANGES, A TRANSFER OF AUTHORIZATION OR A CO-PERMITTEE APPLICATION MUST BE SUBMITTED TO DNREC. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY DNREC.
11. THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT ASSOCIATED WITH THE PROJECT, INCLUDING, BUT NOT LIMITED TO, PERFORMING WEEKLY SITE INSPECTIONS DURING CONSTRUCTION AND AFTER RAIN EVENTS, AND MAINTAINING WRITTEN LOGS OF THESE INSPECTIONS.
12. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
13. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OF DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY SITE REVIEWER.
14. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7, DEL. C. CH60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.
15. DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL SHALL BE PROVIDED TO THE OWNER AND ENGINEER.
16. TEST RESULTS, SEE TAGS, SOIL AMENDMENT TAGS, ETC, SHALL BE PROVIDED TO THE DEPARTMENT OF WITH THE APPROVED PLAN AND THE STANDARDS AND SPECIFICATIONS OF THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE DEPARTMENT OF THE DELEGATED AGENCY SHALL HAVE THE DISCRETION TO REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATION PROVIDED WITHIN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
17. SEE SHEET CS-8505 FOR SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DATA.
18. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 14 CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS, TOPSOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THESE REQUIREMENTS DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE, OR FOR THOSE AREAS ON WHICH ACTUAL EARTH MOVING ACTIVITIES ARE CURRENTLY BEING PERFORMED.
19. DURING SOIL MATERIAL EXCAVATION AND RELOCATION, IT MAY BE NECESSARY TO PROVIDE TEMPORARY SOIL STABILIZATION IN THE EVENT OF A MAJOR RAINFALL EVENT. THE CONTRACTOR SHALL STABILIZE SOIL PILES AND EXPOSED EXCAVATED AREAS IF PERMANENT STABILIZATION IS NOT PRESENT WITH A BIO-DEGRADABLE, LIQUID CO-POLYMER SOIL STABILIZER SUCH AS GORILLA-SHOT AS MANUFACTURED BY SOILWORKS INC.
20. CONTRACTOR SHALL MAINTAIN A CLEAN, FREE OF TRASH AND NON-BIODEGRADABLE WASTE, SITE AT ALL TIMES. CONTRACTOR TO CLEAN SITE AND ROADWAYS/IMPERVIOUS COVER DAILY BEFORE CLOSE OUT/LEAVING SITE.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MATERIALS SHALL BE REMOVED BY THE CONTRACTOR UPON APPROVAL OF FINAL CONSTRUCTION.
22. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND ADHERING TO ALL ISSUED PERMITS AND APPROVALS PRIOR TO CONSTRUCTION IN ORDER TO PROPERLY CONSTRUCT THE PROJECT. ALL WORK FOR THIS PROJECT MUST BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS, BY LAWS, ORDINANCES, AND REGULATIONS UNLESS DOCUMENTED WAIVERS, PERMISSIONS, OR APPROVALS ARE IN PLACE WITH THE APPLICABLE AUTHORITY. ANY ADDITIONAL PERMITS AND APPROVALS NECESSARY TO CONSTRUCT THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND DOCUMENTATION PROVIDED TO THE ENGINEER/OWNER.
23. THE CONTRACTOR MAY NOT PROCEED WITH ANY DEVIATIONS FROM THE PROJECT UNTIL PRIOR REVIEW AND APPROVAL IS RECEIVED FROM THE OWNER/ENGINEER/PERMITTING AUTHORITY.
24. CONTRACTOR SHALL PROVIDE ADEQUATE NOTICE TO OWNER/ENGINEER FOR ANY NECESSARY CHANGES AND/OR DEVIATIONS FROM THE PROJECT SO AS TO NOT INCUR ANY CONSTRUCTION DELAYS OR STOP WORK ORDER.

LIMIT OF DISTURBANCE:

6.35± ACRES

SOILS DATA:

1. DcB - DELANCO SILT LOAM, 3 TO 8% PERCENT SLOPES, TYPE C SOIL
2. DcB - DELANCO-CODORUS-HARBORO COMPLEX, 0 TO 8 PERCENT SLOPES, FLOODED, TYPE C SOIL
3. Hw - HARBORO-CODORUS COMPLEX, 9 TO 15 PERCENT SLOPES, FREQUENTLY FLOODED, TYPE D SOIL

DRAINAGE AREA:

EXISTING CONDITION:

19.54± ACRES

6.59 OF 19.54 IMPERVIOUS
(34% OF DRAINAGE AREA)

PROPOSED CONDITION:

4.85 OF 19.54 IMPERVIOUS
(25% OF DRAINAGE AREA)
A REDUCTION OF EXISTING PAVED
SURFACE AREA ON SITE BY 70%

OWNER'S CERTIFICATION

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E., BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVERSHEET.

AUTHORIZED SIGNER
CITY OF NEWARK
220 SOUTH MAIN ST.
NEWARK, DE 19715
PHONE # 302-366-7055
FAX # 302-366-7169

DATE

CERTIFICATION OF PLAN ACCURACY

I, WILLIAM F. WENDLING, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

WILLIAM F. WENDLING, P.E.
PENNONI ASSOCIATES INC.
121 CONTINENTAL DRIVE, SUITE 207
NEWARK, DE 19713
PHONE # 302-655-4451
FAX # 302-654-2895

DATE

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft

Pennoni

DATE	NO.	REVISIONS	BY
08/29/13	4	PER CITY OF NEWARK COMMENTS	MH
07/17/13	3	PER DNREC COMMENTS	MH
5/30/13	2	ISSUED FOR FINAL	SPA
04/15/13	1	PER CITY OF NEWARK COMMENTS	MH

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK



SEDIMENT AND STORMWATER PLAN

CURTIS MILL PARK
225 PAPER MILL ROAD
NEWARK, DE 19711

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



JOB NO.
CNEW 1207

SHEET 12 OF 17

SCALE
1"=50'

DRAWN BY
MH

DATE
1/31/13

APPROVED
WFW

DRAWING NO.

CS-8000

Pennoni Associates Inc. Engineers • Surveyors • Planners • Landscape Architects

Christiana Executive Campus, 121 Continental Drive, Suite 207
Newark, DE 19713-4310 (302) 655-4451

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES										
Mix #	Species ¹	Seeding Rate	Optimum Seeding Dates ²						Planting Depth ³	
			O = Optimum Planting Period, A = Acceptable Planting Period							
			Coastal Plain		Piedmont		All			
Certified Seed		lb/Ac ⁴	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	11/1-4/30	5/1-8/14	8/15-10/31	
1	Barley	125	4	O	A	O	O	A	O	1-2 inches
2	Oats	125	4	O	A	O	A	O	A	2-3" sandy soils
3	Rye	125	4	O	A	O	O	A	O	1-2 inches
4	Perennial Ryegrass	125	4	O	A	O	O	A	O	2-3" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	A	O	0.5 inches
6	Winter Wheat	125	4	O	A	O	O	A	A	1-2" sandy soils
7	Foxtail Millet	30 PLS	0.7	O				O		2-3" sandy soils
8	Pearl Millet	20 PLS	0.5	O				O		0.5 inches
										1-2" sandy soils

1. Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.

2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.

3. Applicable on slopes 3:1 or less.

4. Fifty pounds per acre of Annual Lespedeza may be added to 1/2 the seeding rate of any of the above species.

5. Use varieties currently recommended for Delaware. Contact a County Extension Office for information.

6. Warm season grasses such as Millet or Weeping Lovegrass may be used between 5/1 and 9/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

Source:

Delaware ESC Handbook

Symbol:


Detail No.

DE-ESC-3.4.3

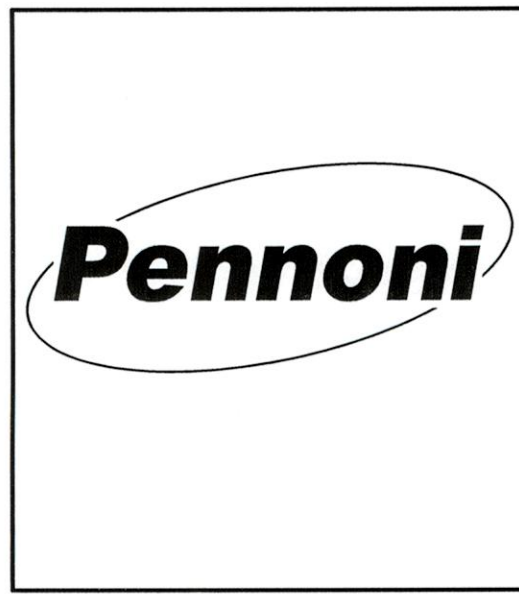
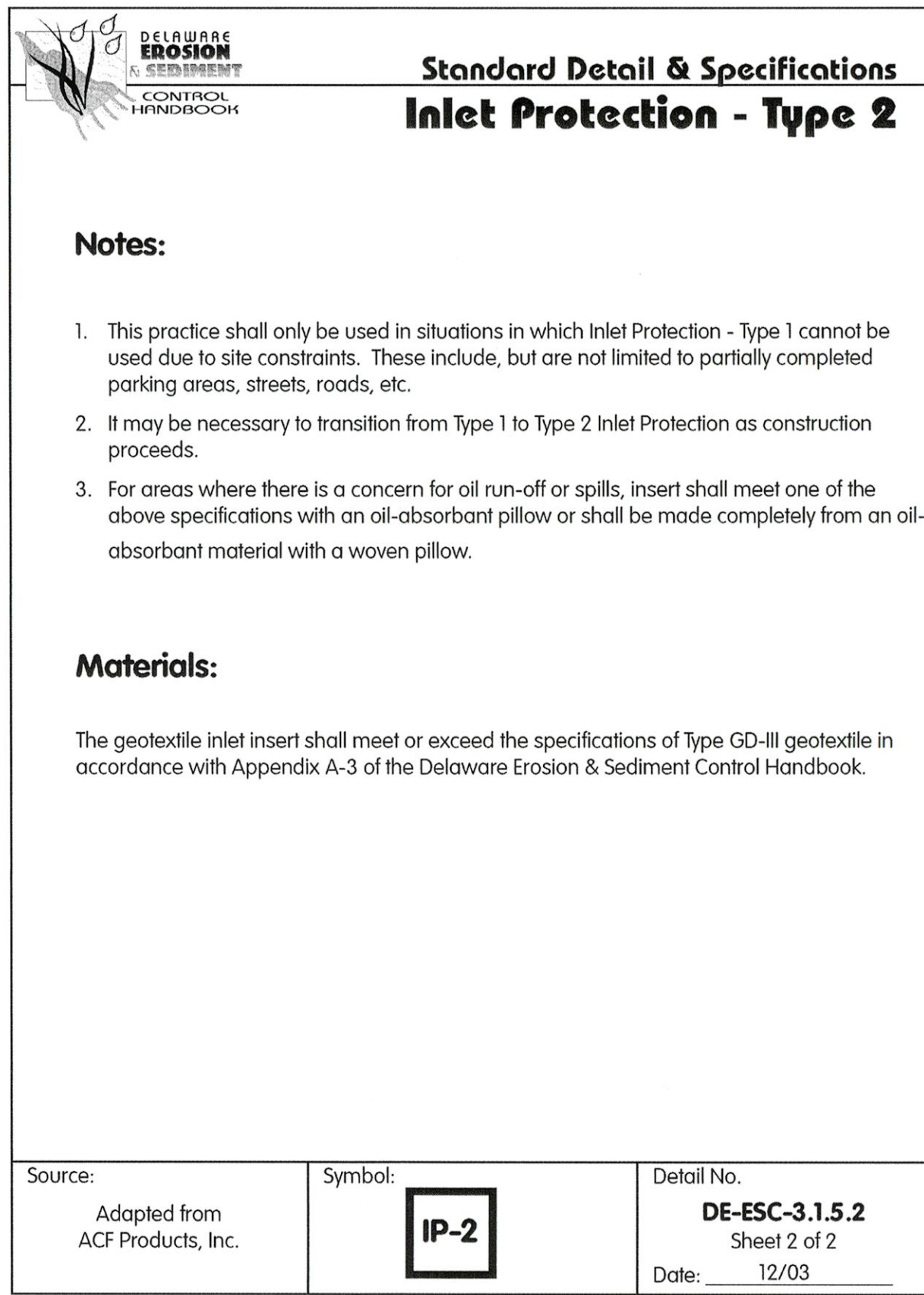
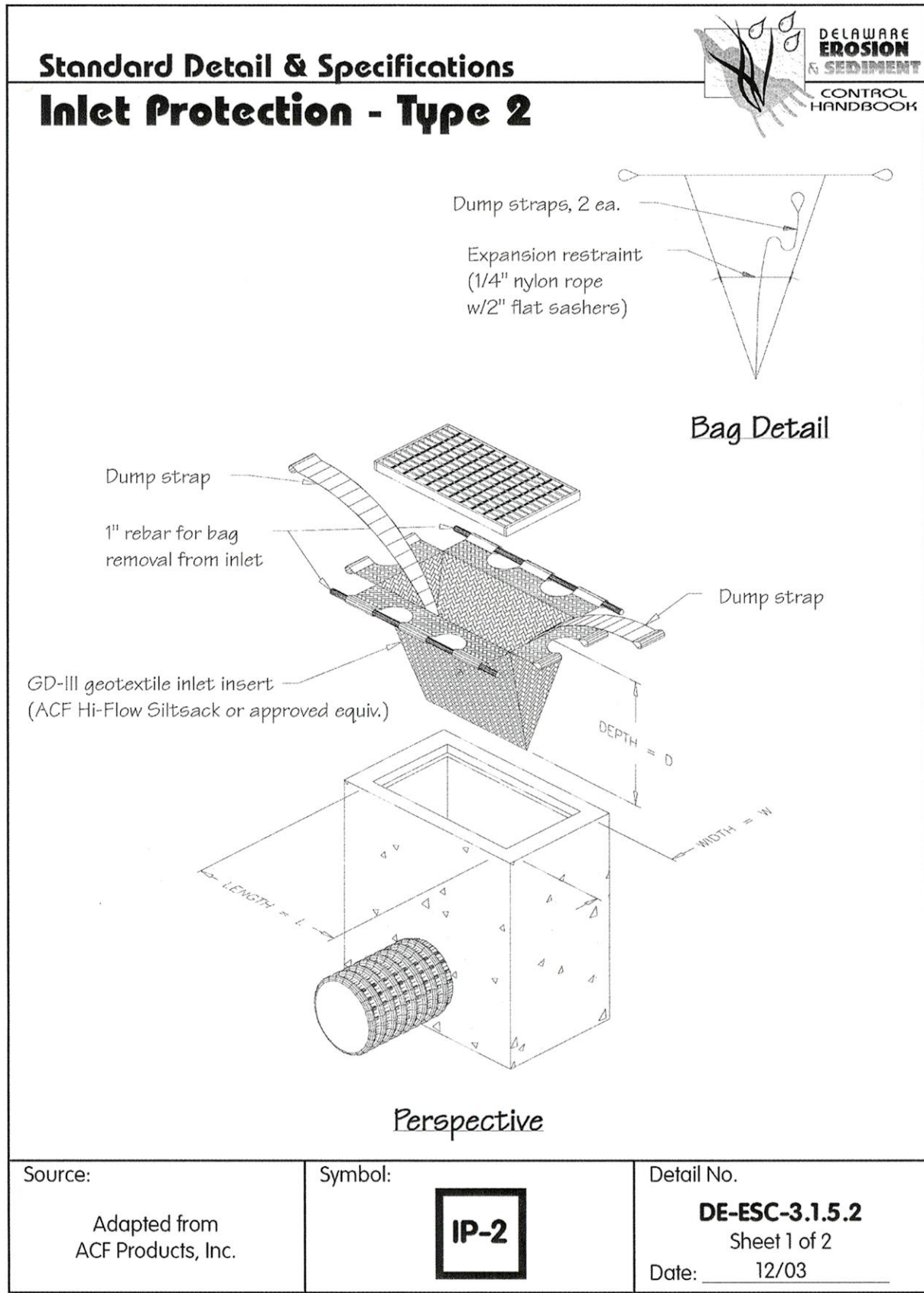
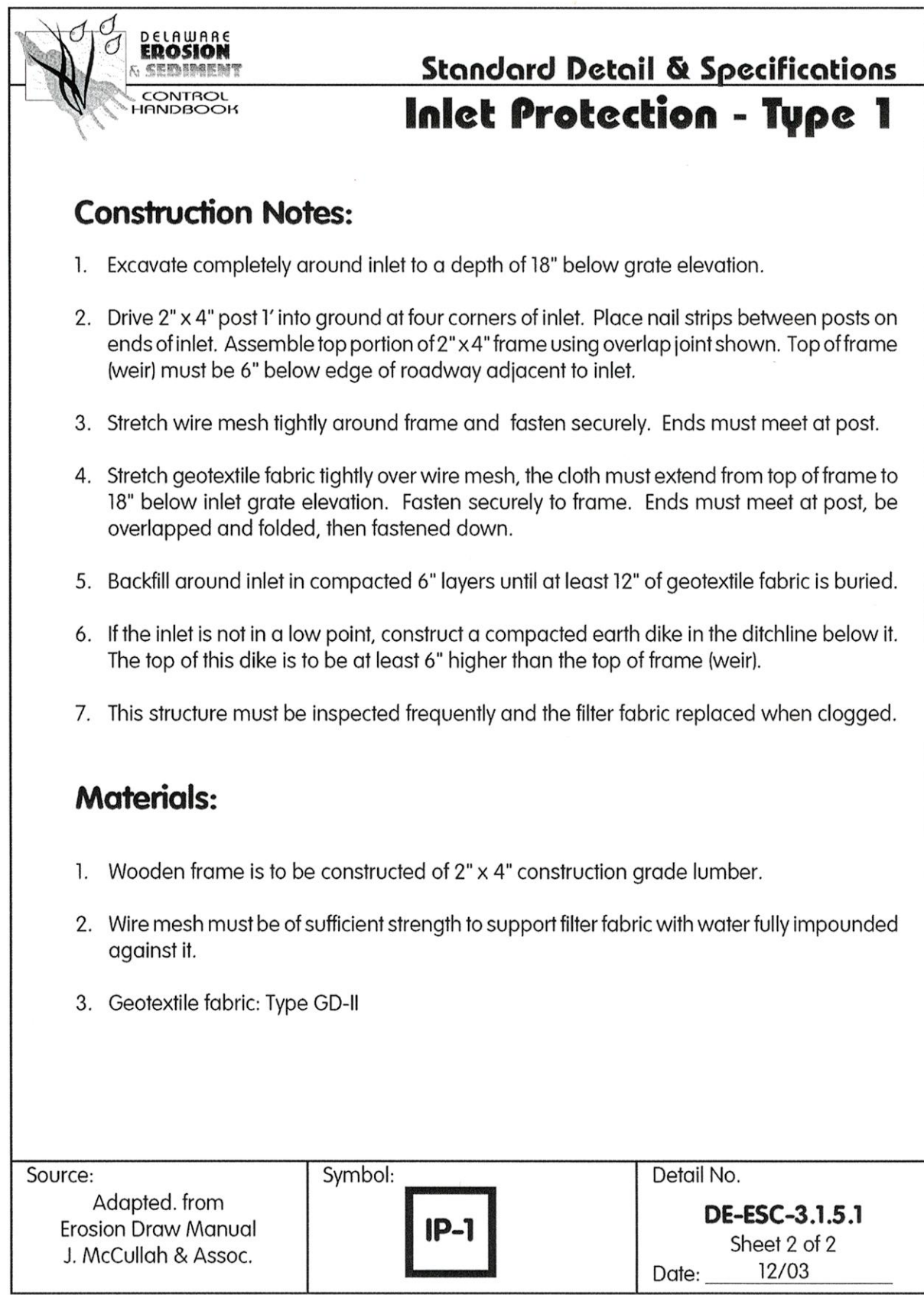
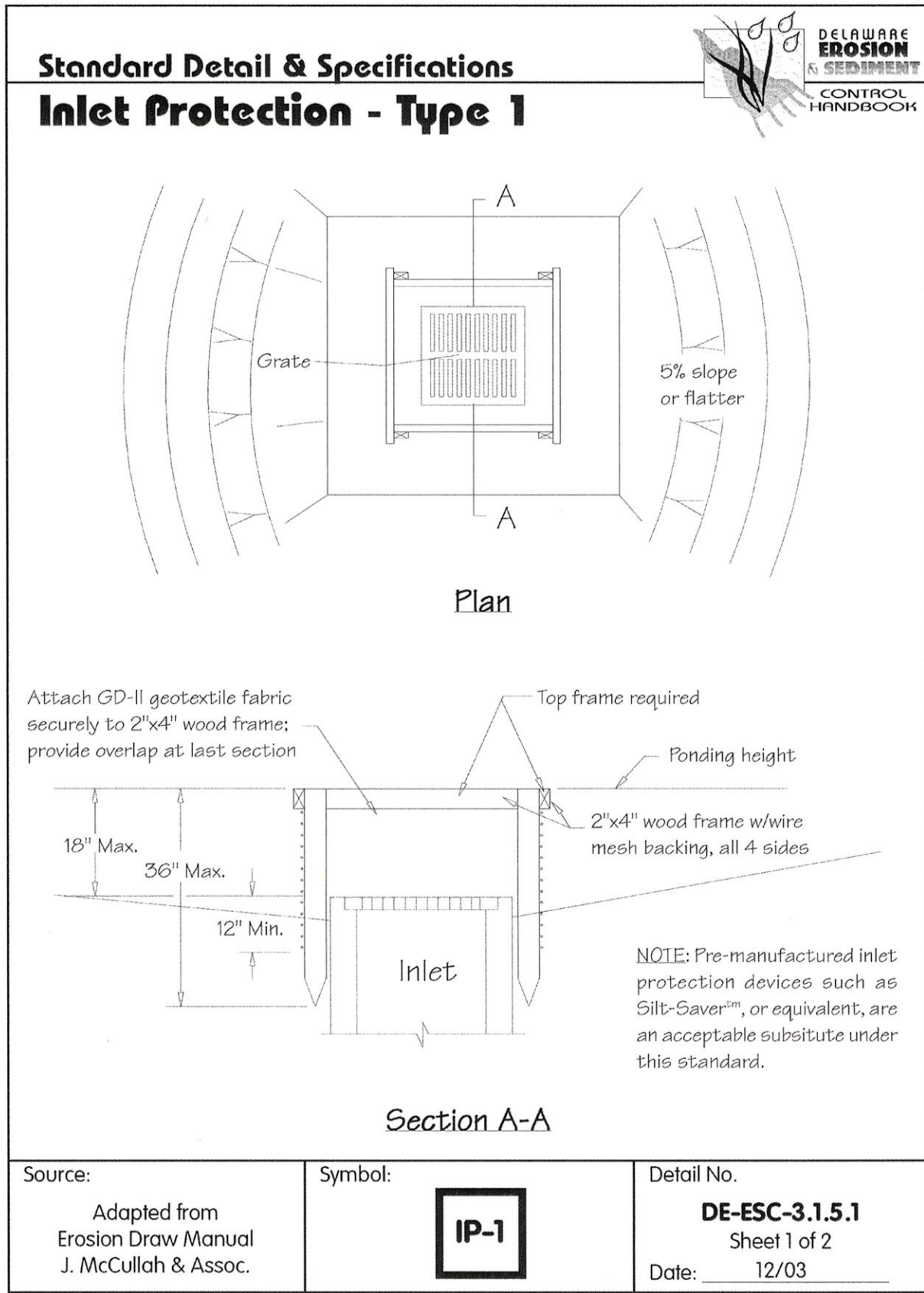
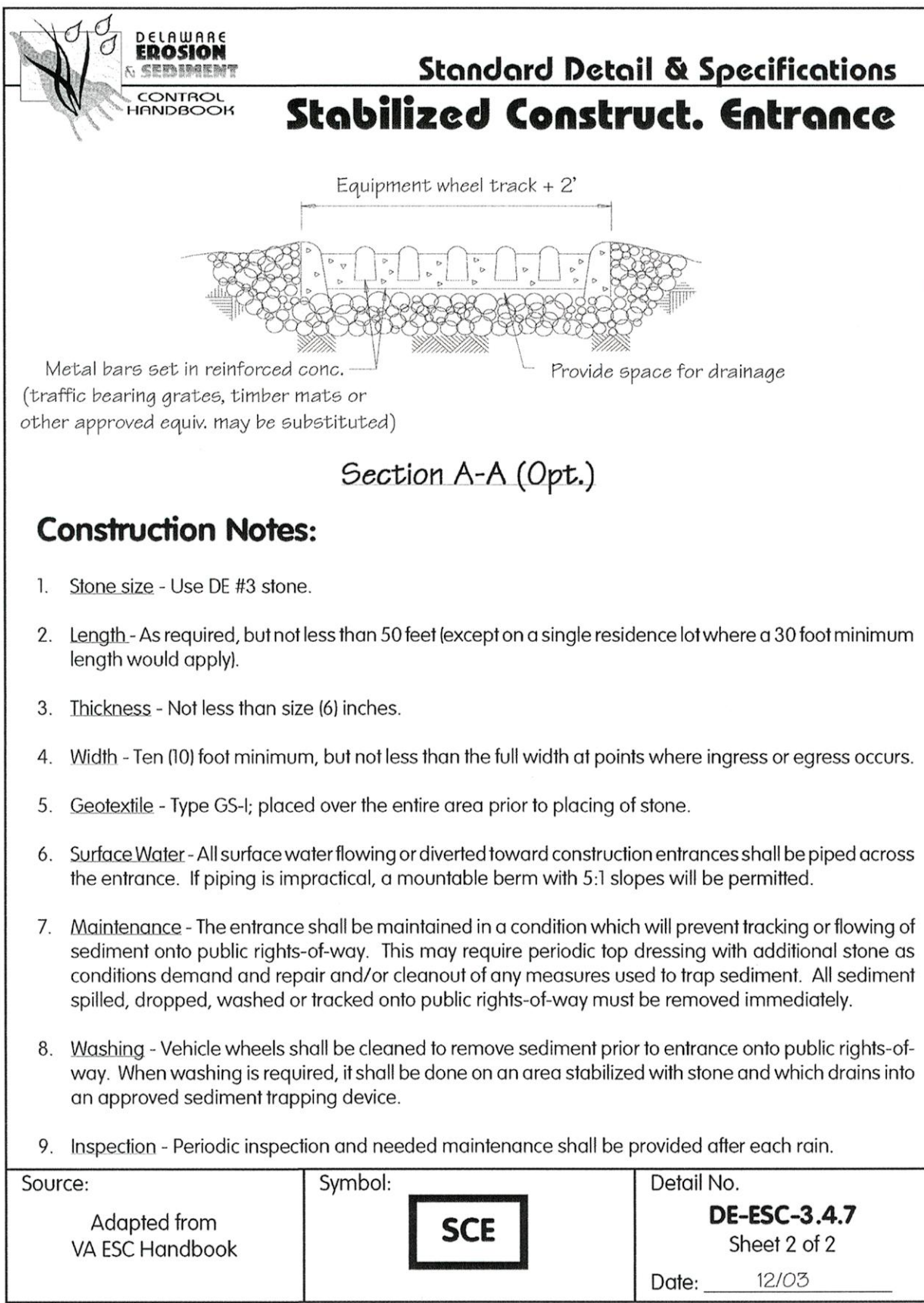
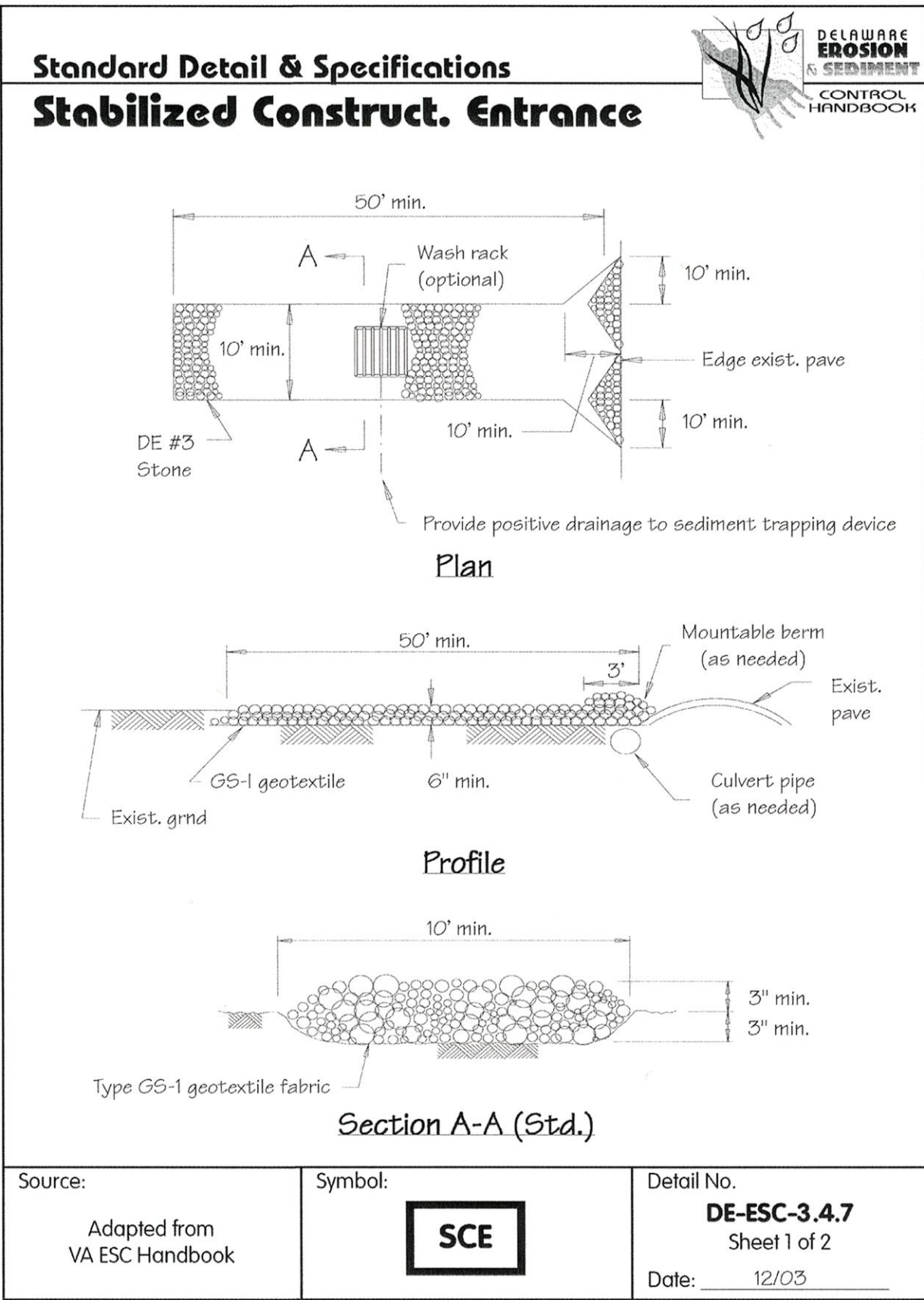
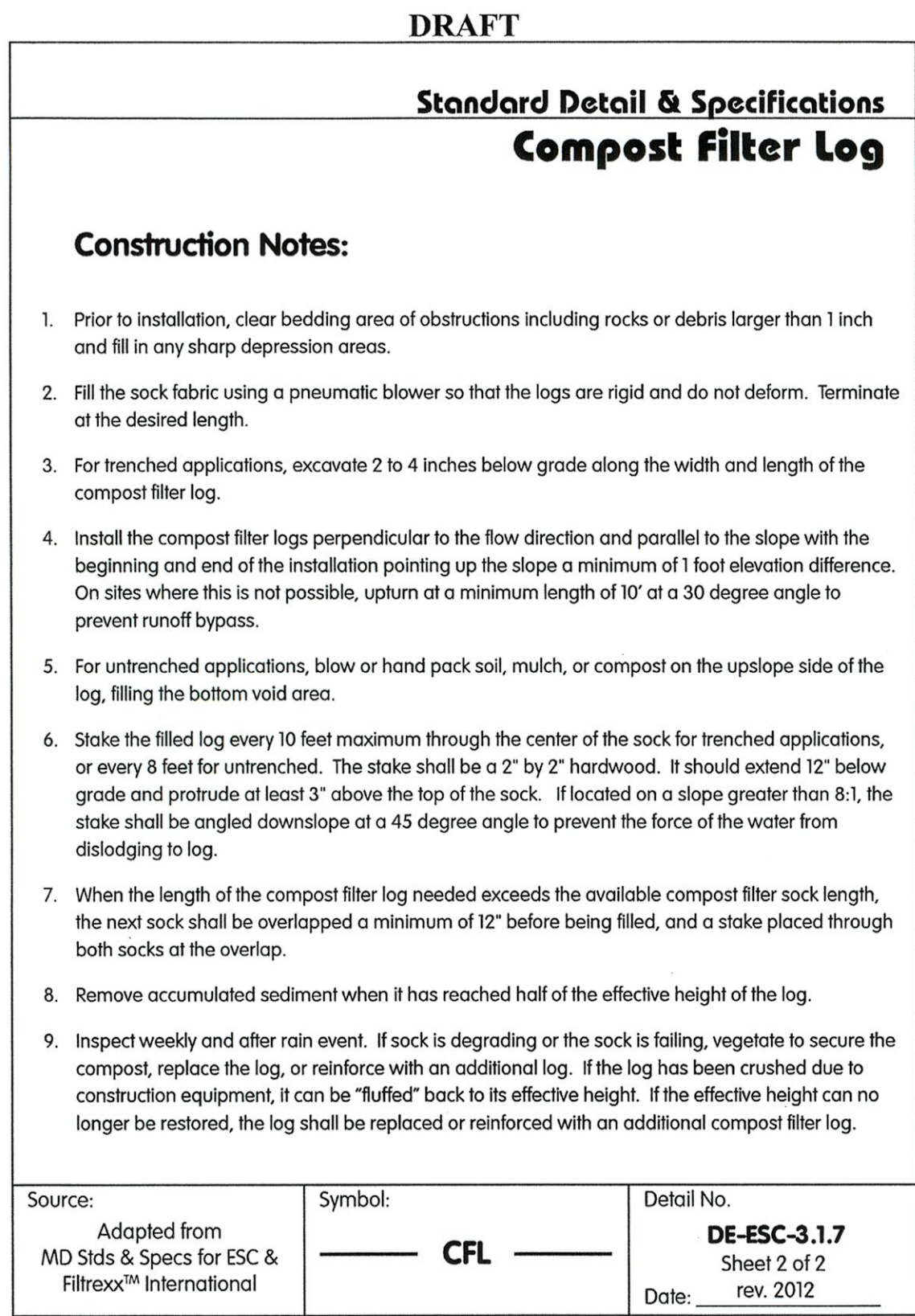
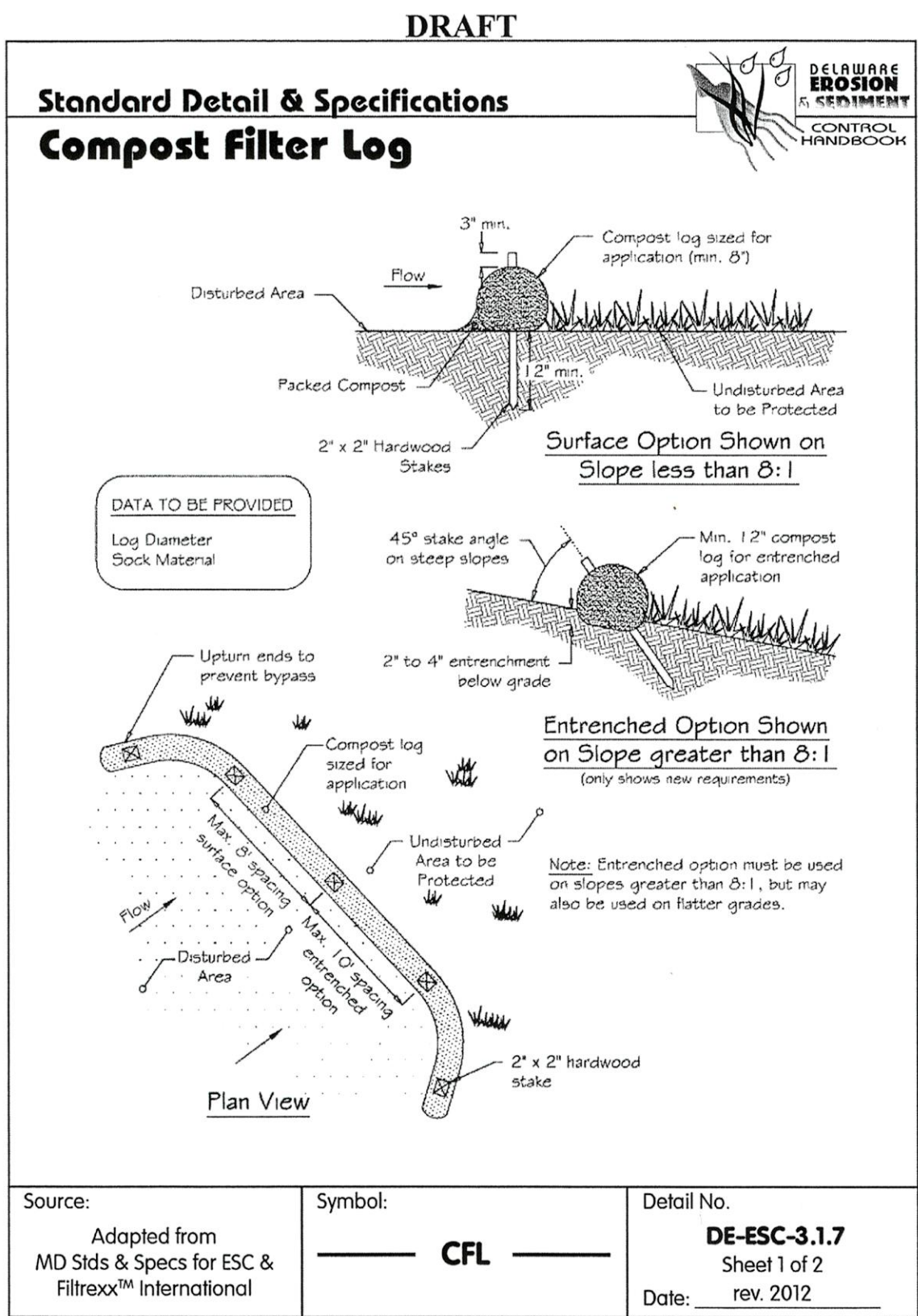
Sheet 1 of 4

Date: 12/03

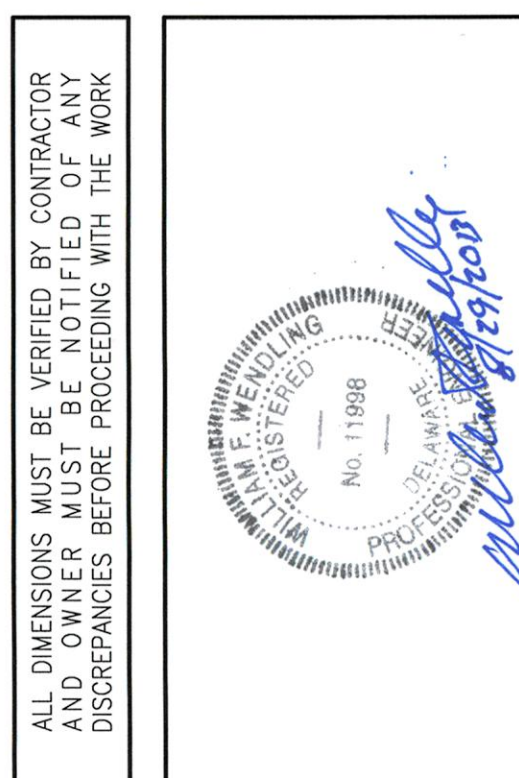
- Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.
- May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
- Applicable on slopes 3:1 or less.
- Fifty pounds per acre of Annual Lespedeza may be added to 1/2 the seeding rate of any of the above species.
- Use varieties currently recommended for Delaware. Contact a County Extension Office for information.
- Warm season grasses such as Millet or Weeping Lovegrass may be used between 5/1 and 8/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

		<h1>Standard Detail & Specifications</h1> <h2>Vegetative Stabilization</h2>									
PERMANENT SEEDING AND SEEDING DATES											
Seeding Mixtures		Seeding Rate ¹	Optimum Seeding Dates ² O = Optimum Planting Period A = Acceptable Planting Period								Remarks
Mix No.	Certified Seed ³		Coastal Plain				Piedmont		All ⁴		
	Well Drained Soils	lb/Ac	2/1-4/30	5/1-8/14	8/15-10/31	11/1-4/30	5/1-8/14	8/15-10/31			
1	Tall Fescue	140	3.2	A	O	A	O	A	O	Add 100 lb./ac. Winter Rye	Good erosion control mix. Tolerant of low fertility soils. Lowgrasses very difficult to mow; Germinates only in hot weather!
2	Creeping Lovegrass	10	0.23								
3	Bentgrass (Sheep Fescue)	30	0.69							Add 100 lb./ac. Winter Rye	Good erosion control mix. Tolerant of low fertility soils.
4	Common Lespedeza ⁵	15	0.35								Good wildlife cover and food.
5	Tall Fescue (Full type) or Strong Creeping Red Fescue or Perennial Ryegrass	50	1.15	O	A	O	O	A	O	Add 100 lb./ac. Winter Rye	Good erosion control mix. Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Tallgrasses in severely droughty vegetation.
6	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass or Seedless	100	2.3	O	A	O	A	O	A	Add 100 lb./ac. Winter Rye	Suitable subterranean mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.
7	plus White Clover ⁶	3	0.07								
8	Shrimp Grass or Coastal Pangrass Big Bluestem Indian Bluestem Indian Grass	10	0.23								Native warm-season mixture. Tolerant of low fertility soils. Drought tolerance. Poor shade tolerance. N fertilizer discouraged - weeds.
9	Tall Fescue (burl type) (blend of seedlings)	150	3.5	O	A	O	A	O	A		Managed field strip for nutrient uptake.
10	Tall Fescue, Ky. Bluegrass (blend) Perennial Ryegrass	150	3.5	O	A	O	A	O	A		Three cultivars of Kentucky Bluegrass. Traffic tolerance.
11	Big Bluestem Indian Grass Little Bluestem Creeping Red Fescue plus one of: Perchgrass Pea Bush Clover Wild Indigo Showy Tick-Trefoil	10	0.23								All species are native. Indian Grass and Bluestem have fleshy seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.
Source:		Symbol:		Detail No.							
Delaware ESC Handbook				DE-ESC-3.4.3 Sheet 2 of 4 Date: 12/03							

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New location

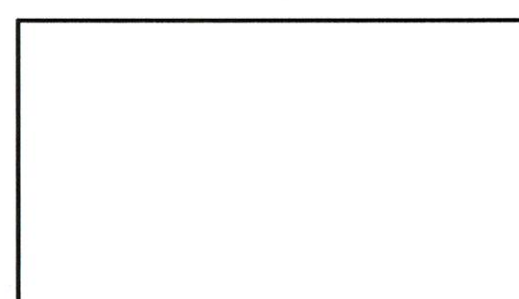


NO.	DATE	REVISIONS	BY
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2	5/20/13	ISSUED FOR FINAL	SRA
1	04/15/13	PER CITY OF NEWARK COMMENTS	MH



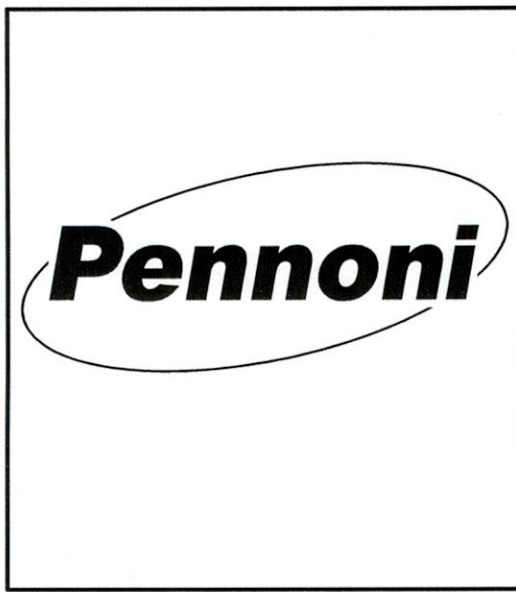
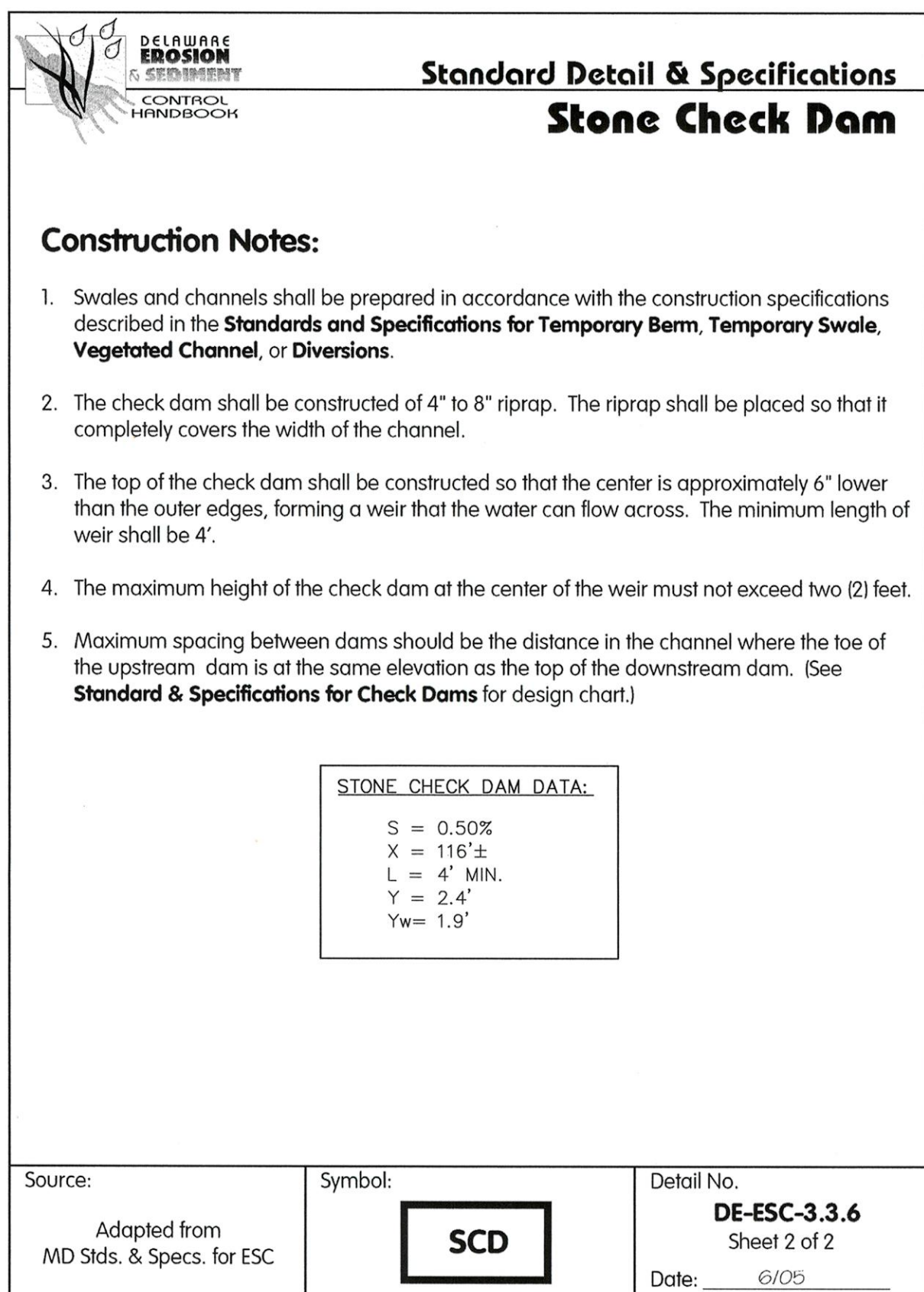
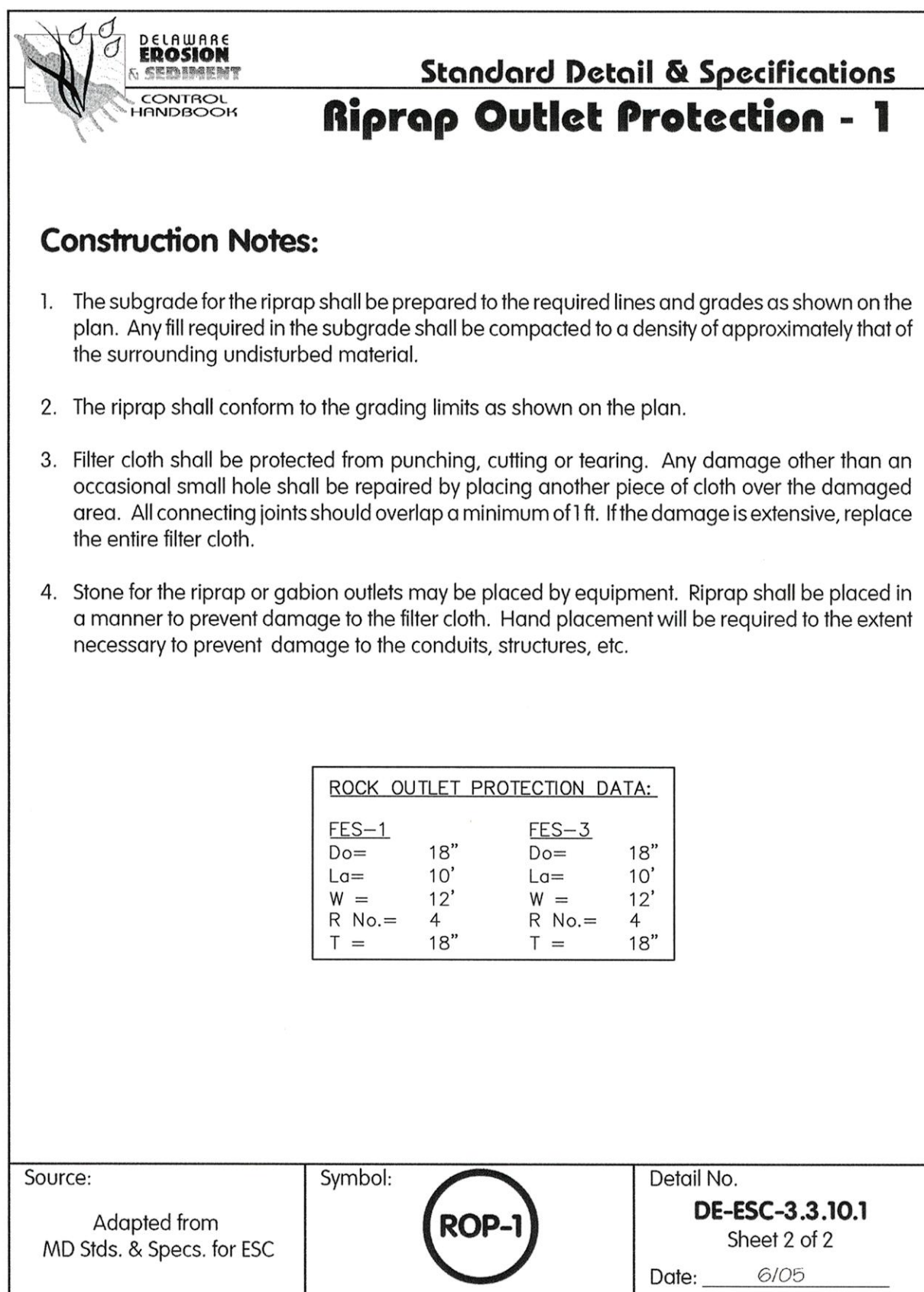
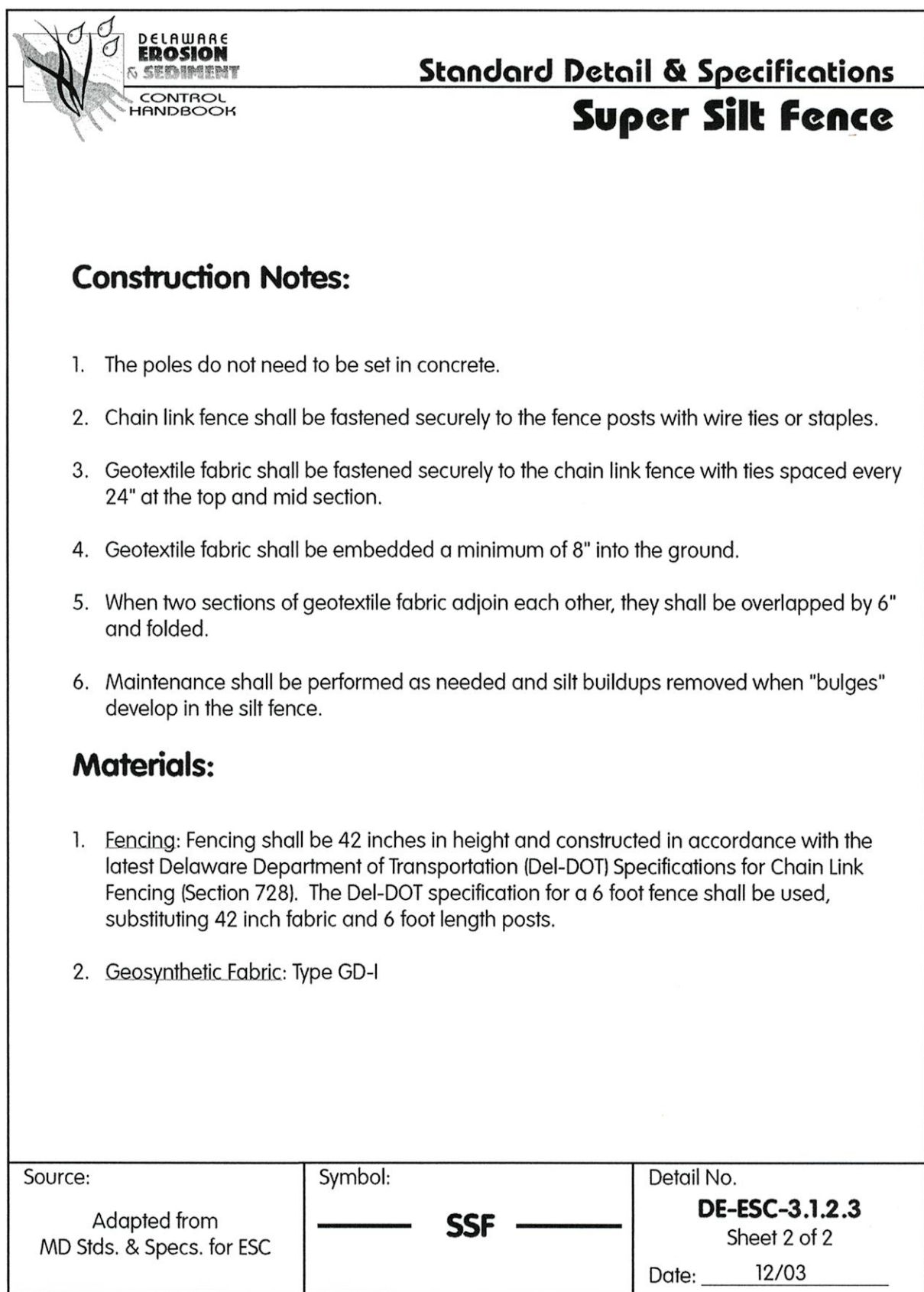
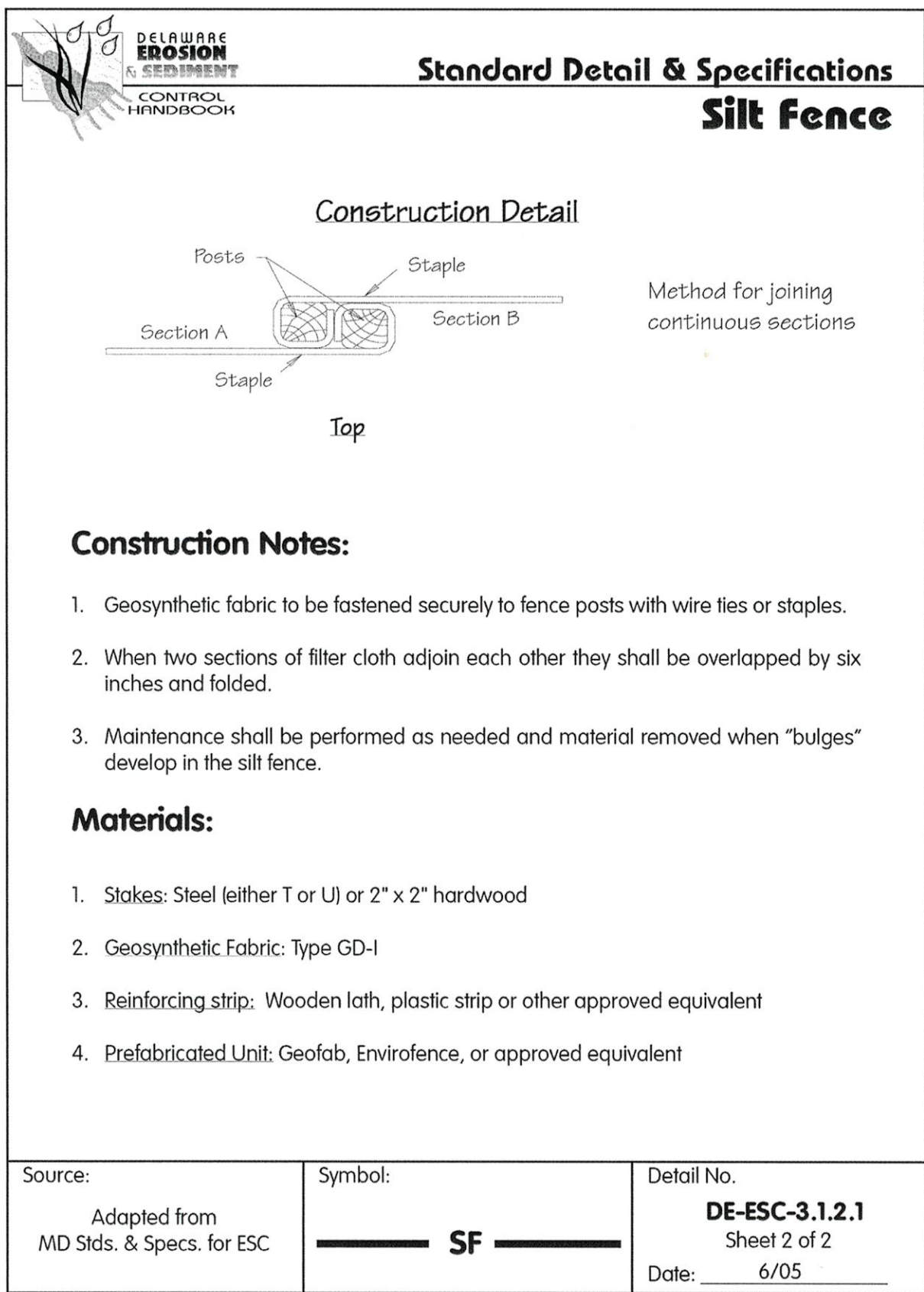
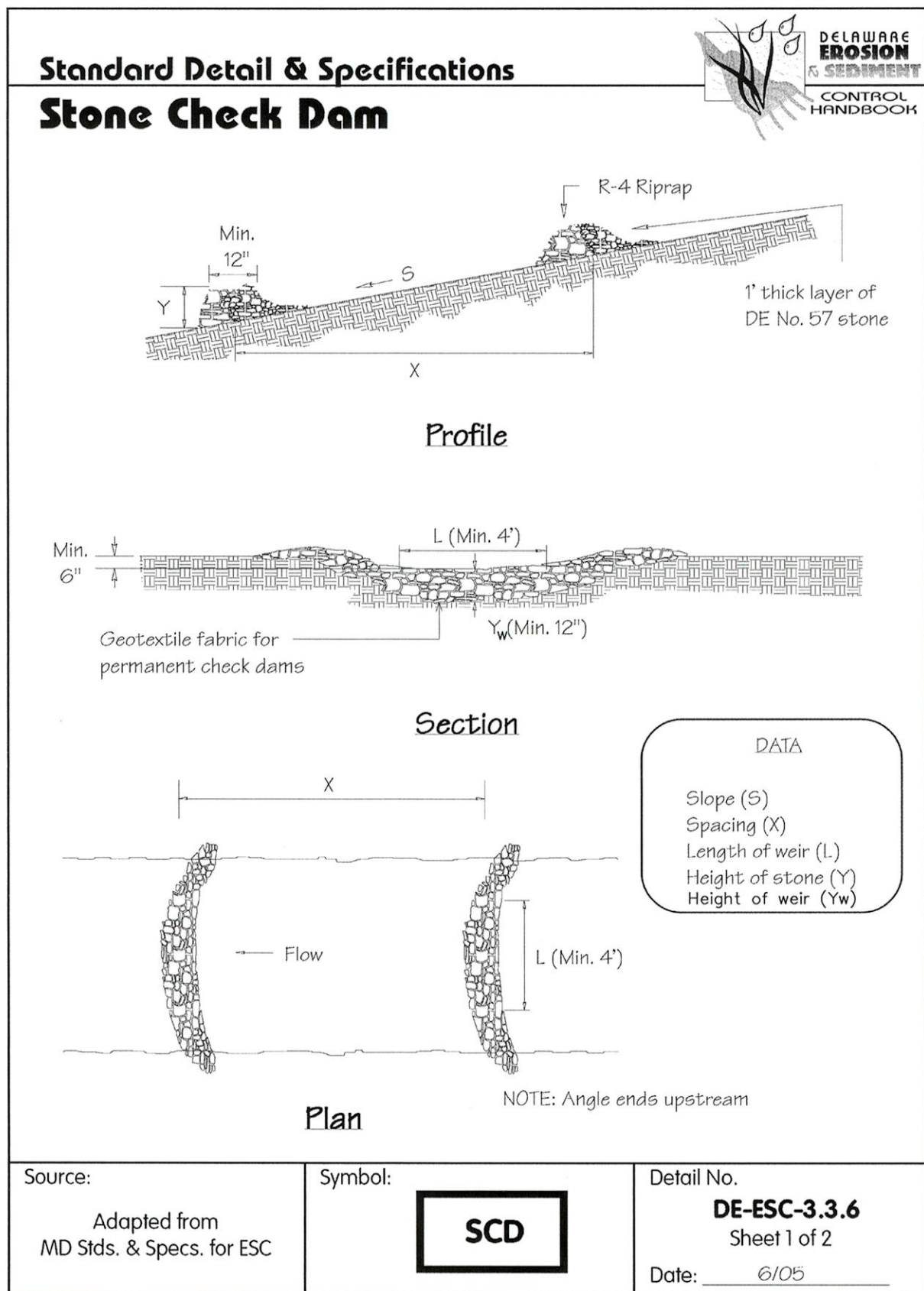
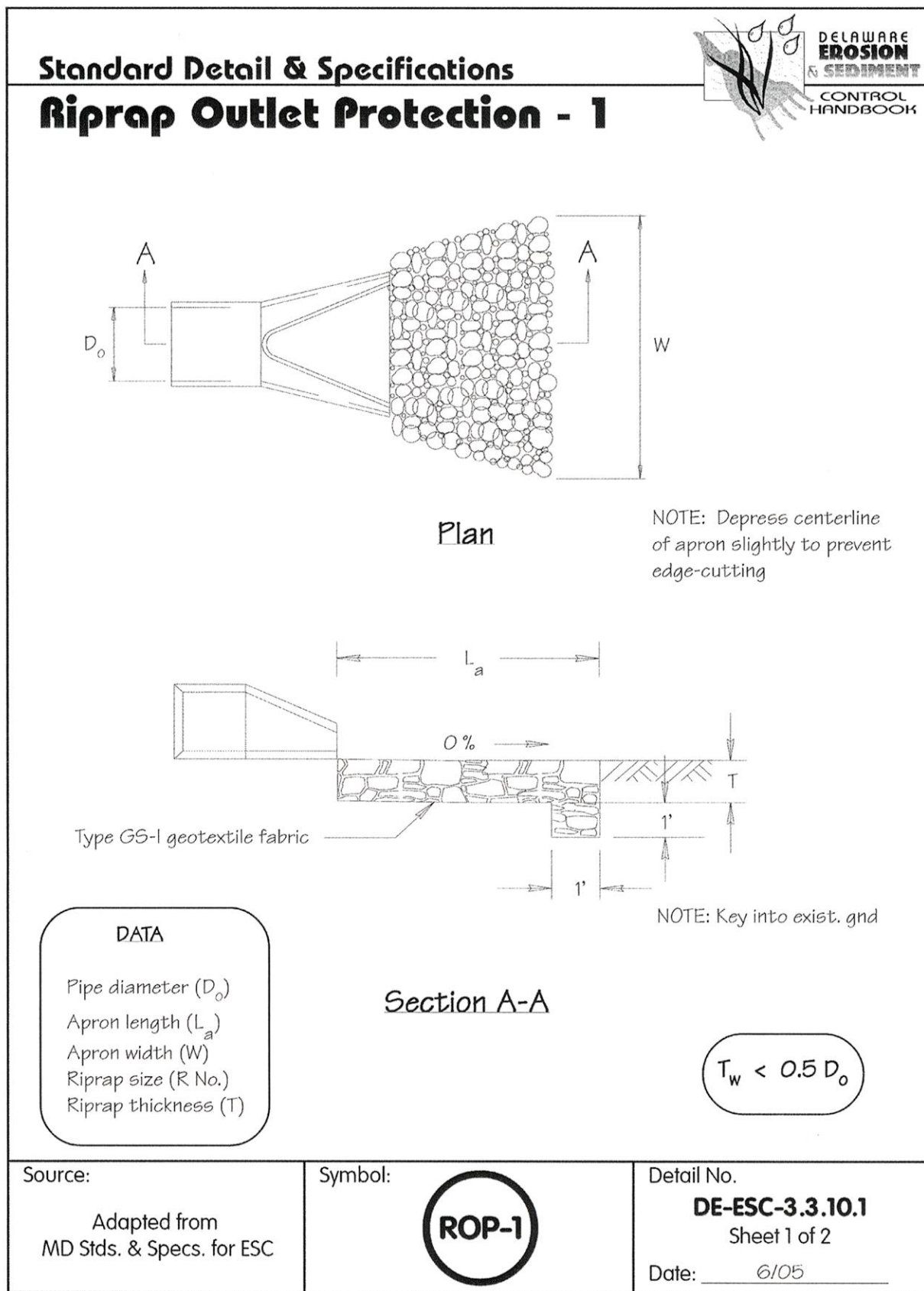
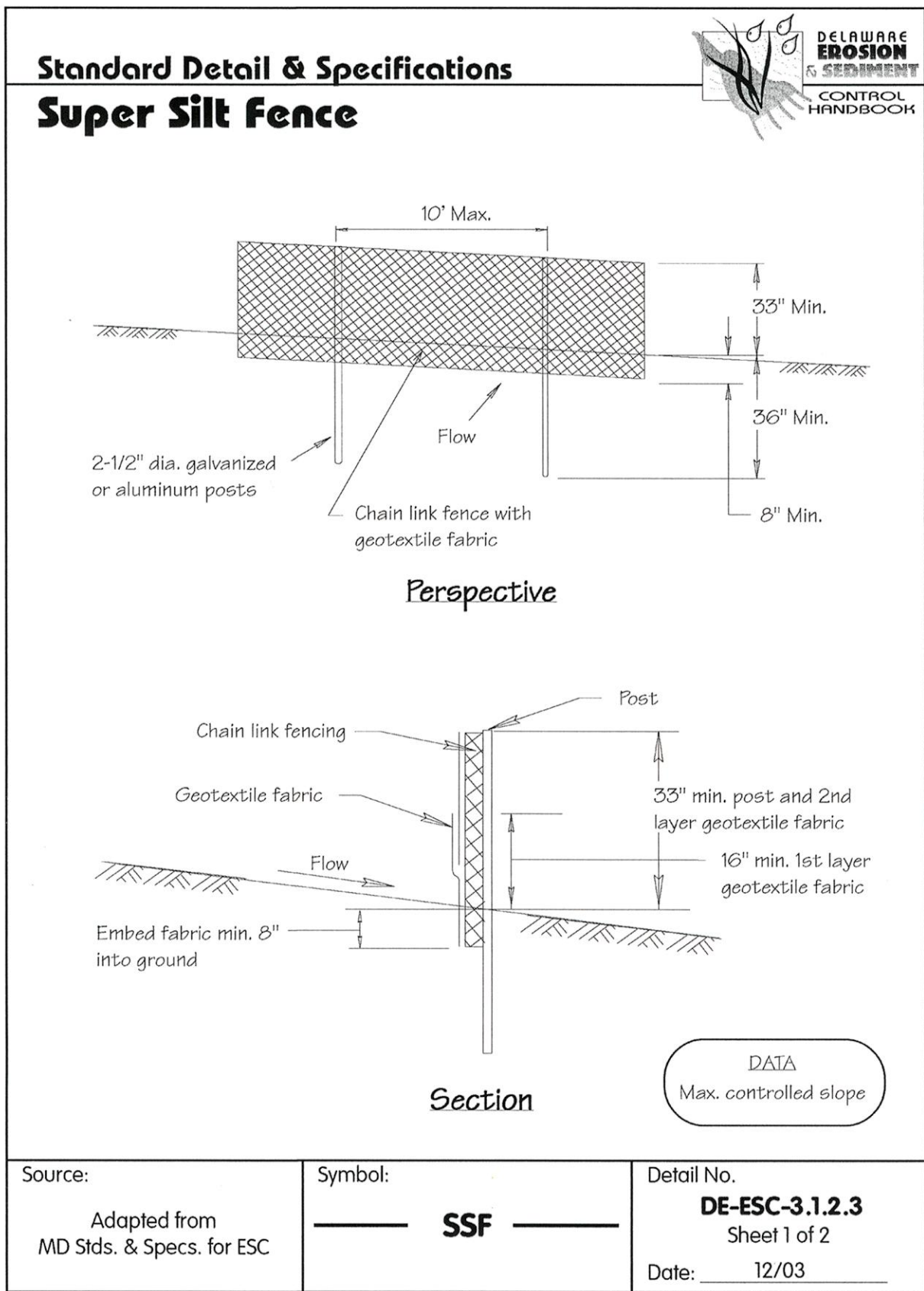
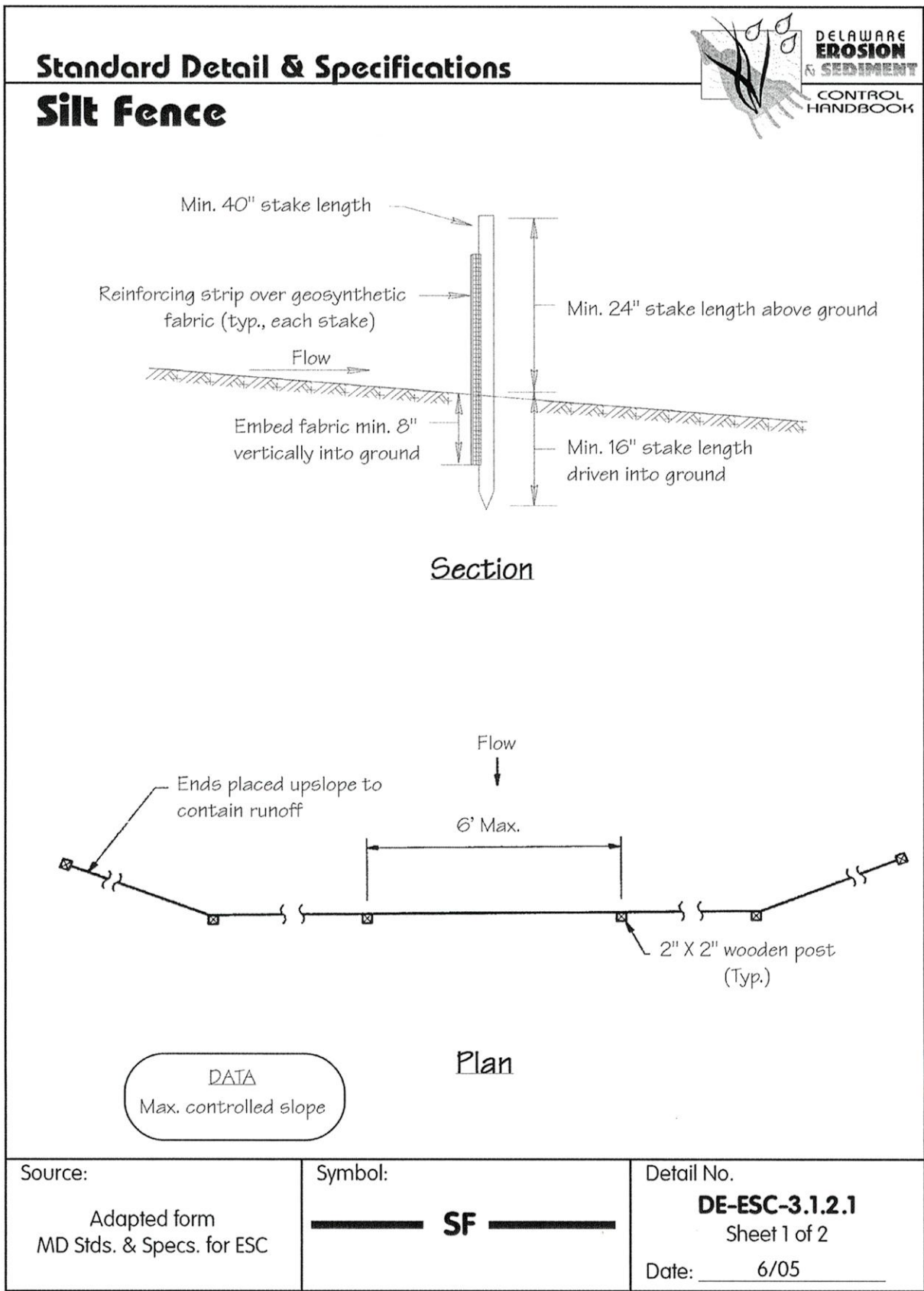
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Newark, DE 19713-4310 (302) 655-4451

CURTIS MILL PARK
225 PAPER MILL ROAD
NEWARK, DE 19711
CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711
SEDIMENT AND STORMWATER CONTROL DETAILS 2 OF 5

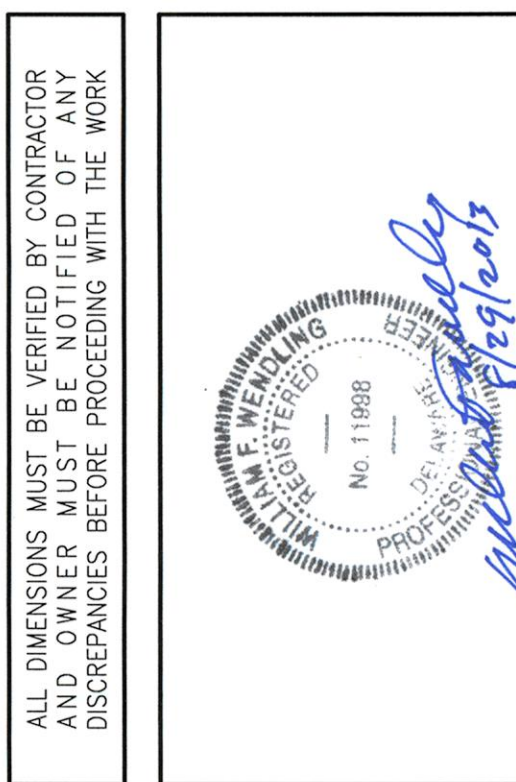


JOB NO. CNEW 1207
SHEET 14 OF 17

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DRAWN BY MH	
DATE 1/31/13	
APPROVED WFW	



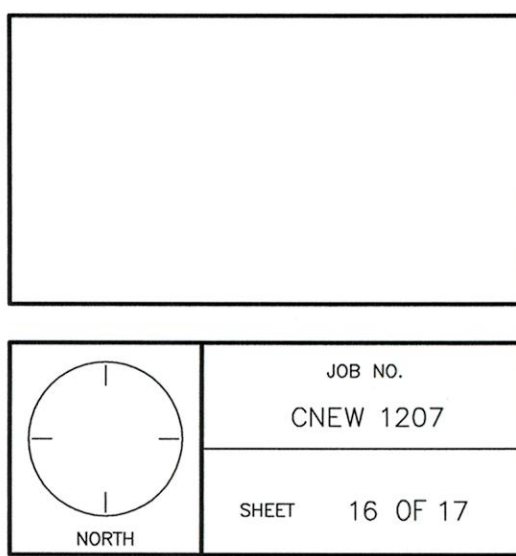
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	PER CITY OF NEWARK COMMENTS	PER DNR COMMENTS	ISSUED FOR FINAL	PER CITY OF NEWARK COMMENTS	REVISIONS
08/29/13	4	3	2	1	NO.
07/17/13					DATE
5/30/13					
04/15/13					



CURTIS MILL PARK
225 PAPER MILL ROAD
NEWARK, DE 19711

SEDIMENT AND STORMWATER CONTROL DETAILS 4 OF 5

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711



SCALE AS NOTED	DRAWING NO. CS-8504
DRAWN BY MH	
DATE 1/31/13	
APPROVED WFW	

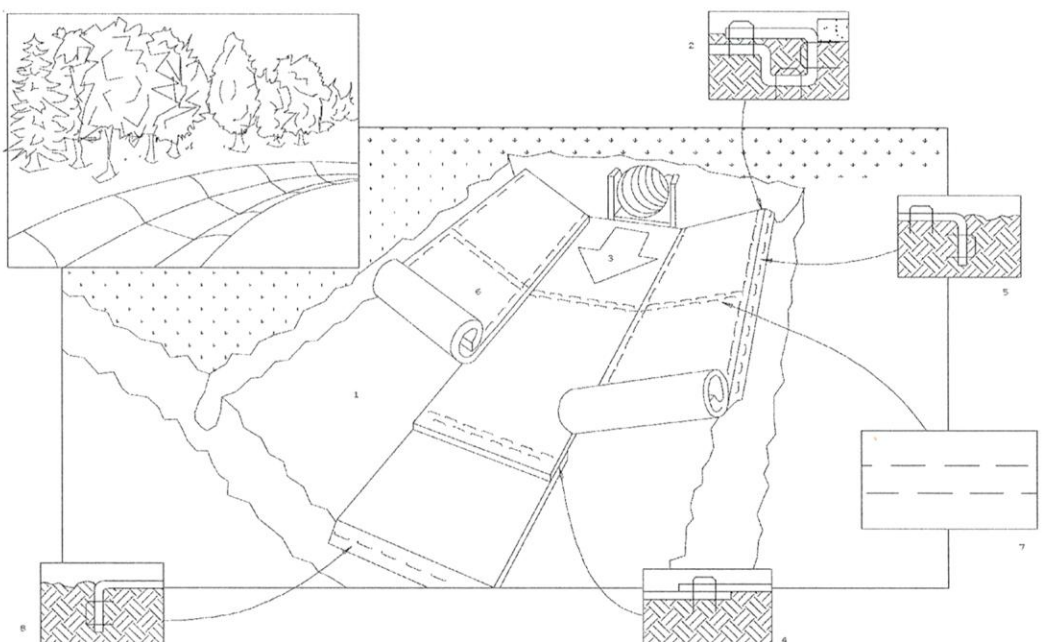
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Christiana Executive Campus, 121 Continental Drive, Suite 207
Newark, DE 19713-4310 (902) 665-4451

Engineers • Surveyors • Planners • Landscape Architects

Standard Detail & Specifications

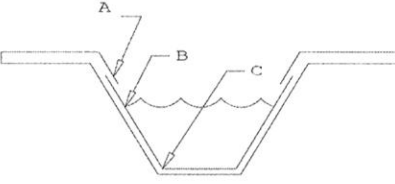
Stabilization Matting - Channel



Perspective

CRITICAL POINTS

A. Overlaps and seams
B. Projected waterline
C. Channel bottom/side slope vertices



Note: Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

Use manufacturer's recommendations for stapling patterns for channel installations.

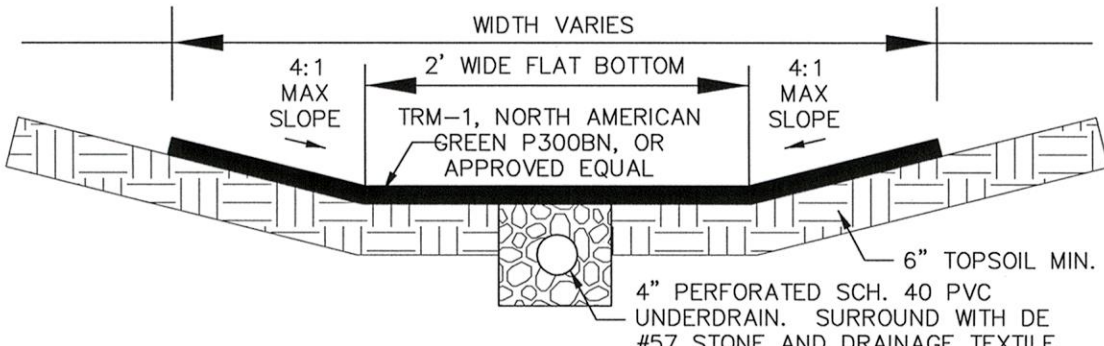
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Symbol: SM-C

Detail No. DE-ESC-3.4.6.2 Sheet 1 of 3
Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Slope



4:1 MAX SLOPE
2" WIDE FLAT BOTTOM
TRM-1, NORTH AMERICAN GREEN P300BN, OR APPROVED EQUAL
4" PERFORATED SCH. 40 PVC UNDERDRAIN, SURROUND WITH DE #57 STONE AND DRAINAGE TEXTILE.
6" TOPSOIL MIN.

TYPICAL SWALE SECTION

SCALE: N.T.S.

Standard Detail & Specifications

Stabilization Matting - Channel

Construction Notes:

1. Prepare soil before installing matting, including application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact the trench after stapling.
3. Roll center mat in direction of water flow on bottom of channel.
4. Place mats end over end (shingle style) with a 6" overlap, use a double row of staggered staples 4" apart to secure mats.
5. Full Length edge of mats at top of side slopes must be anchored in 6" deep X 6" wide trench; backfill and compact the trench after stapling.
6. Mats on side slopes must be overlapped 4" over the center mat and stapled.
7. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4" apart over entire width of the channel. Place a second row 4" below the first row in a staggered pattern.
8. The terminal end of the mats must be anchored in a 6" X 6" wide trench. Backfill and compact the trench after stapling.

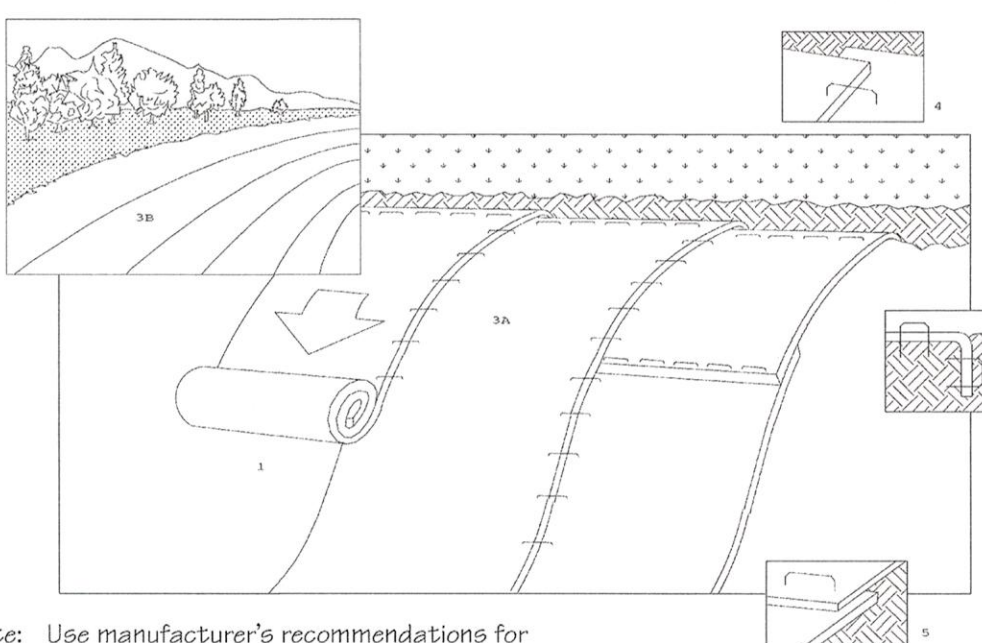
Source: Adapted from North American Green, Inc.

Symbol: SM-C

Detail No. DE-ESC-3.4.6.2 Sheet 2 of 3
Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Slope



Perspective

Note: Use manufacturer's recommendations for stapling patterns for slope installations.

Construction Notes:

1. Prepare soil before installing matting, including application of lime, fertilizer, and seed.
2. Begin at the top of the slope by anchoring the mat in a 6" deep X 6" wide trench. Backfill and compact trench after stapling.
3. Roll the mats (A) down or (B) horizontally across the slope.
4. The edges of parallel mats must be stapled with approx. 2" overlap.
5. When mats must be spliced down the slope, place mats end over end (shingle style) with approx. 4" overlap. Staple through overlapped area, approx. 12" apart.

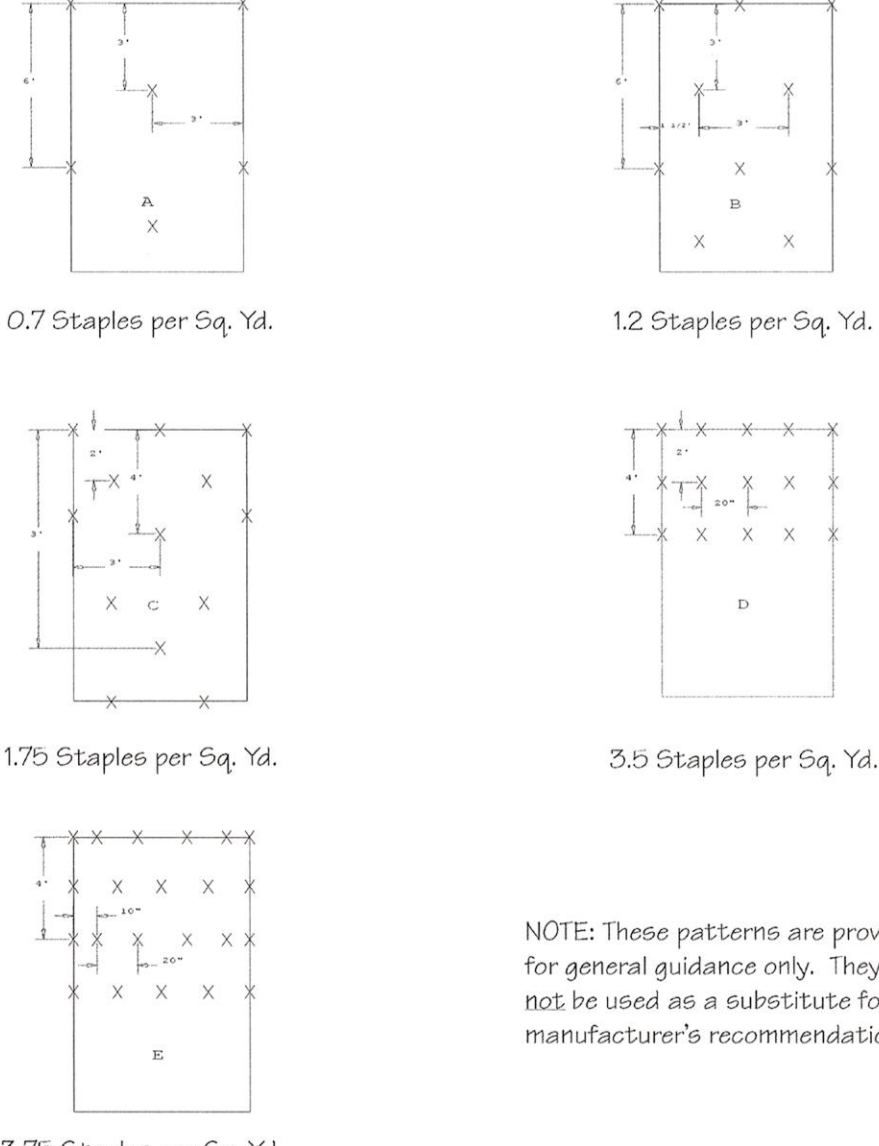
Source: Adapted from North American Green, Inc.

Symbol: SM-S

Detail No. DE-ESC-3.4.6.1 Sheet 1 of 2
Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Channel



0.7 Staples per Sq. Yd.
1.2 Staples per Sq. Yd.
1.75 Staples per Sq. Yd.
3.5 Staples per Sq. Yd.
3.75 Staples per Sq. Yd.

NOTE: These patterns are provided for general guidance only. They shall not be used as a substitute for manufacturer's recommendations.

Stapling Patterns

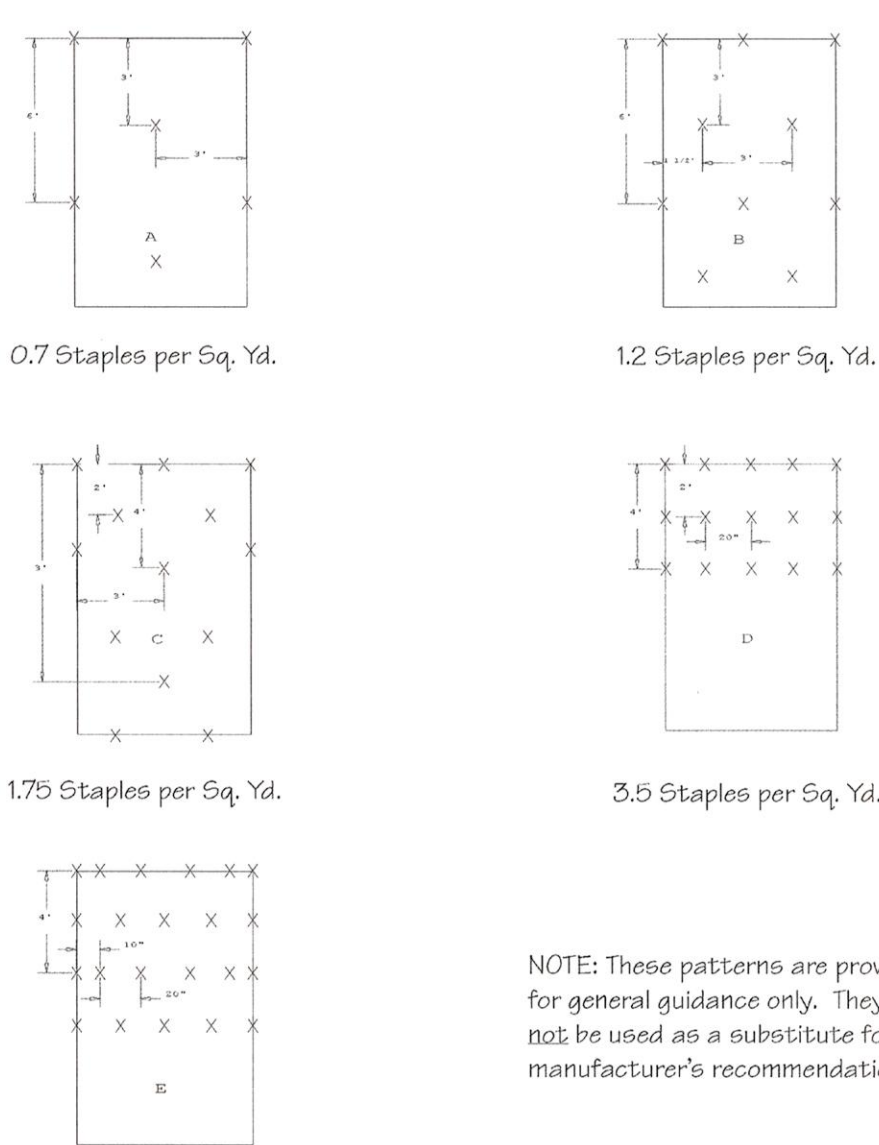
Source: Adapted from North American Green, Inc.

Symbol: SM-C

Detail No. DE-ESC-3.4.6.2 Sheet 3 of 3
Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Slope



0.7 Staples per Sq. Yd.
1.2 Staples per Sq. Yd.
1.75 Staples per Sq. Yd.
3.5 Staples per Sq. Yd.
3.75 Staples per Sq. Yd.

NOTE: These patterns are provided for general guidance only. They shall not be used as a substitute for manufacturer's recommendations.


Stapling Patterns

Source: Adapted from North American Green, Inc.

Symbol: SM-S

Detail No. DE-ESC-3.4.6.1 Sheet 2 of 2
Date: 6/05

- SEQUENCE OF CONSTRUCTION:
1. NOTIFY THE DNREC SEDIMENT AND STORMWATER PROGRAM AND CITY OF NEWARK IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
 2. SUBMIT ANY NECESSARY PRE-CONSTRUCTION NOTIFICATIONS TO THE APPROPRIATE AUTHORITIES PER THE DOCUMENTS, PLANS, SPECIFICATIONS, AND ANY ADDITIONAL REQUIREMENTS FROM APPROVALS OR PERMISSIONS ACQUIRED BY THE CONTRACTOR IN ORDER TO PROPERLY, LEGALLY, AND SAFELY CONSTRUCT THE PROJECT.
 3. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES, OR GRADING, SCHEDULE AND CONDUCT A PRE-CONSTRUCTION MEETING WITH THE AGENCY CONSTRUCTION SITE REVIEWER. THE LANDOWNER/DEVELOPER REPRESENTATIVE, SITE CONTRACTOR, AND CERTIFIED CONSTRUCTION REVIEWER ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING, THE SITE DESIGNER AND ENGINEER ARE RECOMMENDED TO ATTEND.
 4. PER THE REQUEST OF THE DIVISION OF FISH AND WILDLIFE AND THE DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE, TREE AND SHRUB REMOVAL IS PROHIBITED BETWEEN APRIL 1 AND JULY 31 TO REDUCE IMPACTS TO NESTING AND MIGRATORY BIRDS.
 5. CONTRACTOR IS REQUIRED TO CONFIRM ALL TREES TO BE REMOVED IN ORDER TO PROPERLY CONSTRUCT THE PROPOSED PROJECT PRIOR TO REMOVAL. CONTRACTOR TO DOCUMENT SPECIES AND DBH, COORDINATE WITH OWNER/ENGINEER FOR APPROVAL PRIOR TO REMOVAL. PROPOSED TREE QUANTITIES MAY BE REVISED UPON REVIEW OF TOTAL TREE COUNT.
 6. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE AS INDICATED ON THE PLAN, FOLLOWED BY THE PERIMETER CONTROLS (I.E., BERMS, SILT FENCE, COMPOST LOGS) AND INLET PROTECTION ON ANY EXISTING INLETS. MARK THE LIMITS OF SENSITIVE AREAS, SUCH AS PRESERVED TREES, PROTECTED WOODLANDS, AND OTHER SECTIONS THAT ARE NOT TO BE DISTURBED WITH A PHYSICAL BARRIER PER PROJECT SPECIFICATIONS. ONLY CLEAR WOODS THAT ARE NEEDED TO INSTALL THE PERIMETER CONTROLS (AS NEEDED).
 7. SCHEDULE A PERIMETER CONTROL REVIEW WITH THE AGENCY CONSTRUCTION SITE REVIEWER.
 8. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
 9. REMOVE EXISTING STORAGE TANK AND APPURTENANCES PER PROJECT SPECIFICATIONS AND CONCRETE PAD TO BE PREPARED FOR PLACEMENT OF RELOCATED SOIL PER PROJECT SPECIFICATIONS.
 10. CLEAR AND STOCKPILE EXISTING SOIL PILES LOCATED ON EXISTING BUILDING SLABS TO SOIL REGION #1. SURROUND STOCKPILE WITH SILT FENCE AND TEMPORARILY STABILIZE ONCE INACTIVE.
 11. EXPOSE EXISTING MILL RACE TO LIMITS SHOWN ON PLAN (SEE SHEET CS-0201). REMOVE DEBRIS FROM RACEWAY, IF ENCOUNTERED, AND STOCKPILE FOR CONTAINMENT OR DISPOSE OF LEGALLY. INSTALL GEOTEXTILE LINER AS AN INDICATOR FOR LOCATING RACE LATER, IF NEEDED. PLACE COMPACTED FILL MATERIAL IN 8" LIFTS IN RACEWAY TO TOP OF EXISTING GRADE.
 12. CONTRACTOR REQUIRED TO DOCUMENT/RECORD RACE MAKEUP (MATERIAL/APPURTENANCES), EXACT LOCATION (METES AND BOUNDS) AND COORDINATE WITH OWNER PRIOR TO ABANDONING IN PLACE TO CONFIRM ALL APPROPRIATE APPROVALS AND PERMISSIONS ARE ACQUIRED TO COMPLETE THE WORK. PROVIDE DOCUMENTS/RECORDS OF RACE TO OWNER PRIOR TO PROCEEDING.
 13. DEMOLISH/PUNCTURE REMAINING BUILDING SLABS AND PAVEMENT IN PLACE. WHERE PROPOSED SOIL COVER WILL BE LESS THAN 12 INCHES, RELOCATE DEMOLISHED MATERIALS AND PLACE WITHIN LIMIT OF DISTURBANCE.
 14. CLEAR AND GRUB AS REQUIRED TO EXCAVATE SOIL REGION 3.
 15. EXCAVATE SOIL REGION 3 AND PLACE EXCAVATED MATERIALS IN SOIL CONSOLIDATION AREA UNDER PROPOSED PAVEMENT AREAS, PLACING MATERIALS FROM NORTH TO SOUTH.
 16. CONTRACTOR IS REQUIRED TO BACKFILL, WITH CLEAN FILL, ANY AND ALL OPEN EXCAVATIONS CONTINUOUSLY AND IMMEDIATELY FOLLOWING EXCAVATION.
 17. CLEAR AND GRUB TO EXCAVATE AND REGRADE WEST OF SOIL REGION 3 SOUTH OF EXISTING PONDS.
 18. STOCKPILE TOPSOIL FROM EXCAVATION AREA. STOCKPILES SHOULD BE SURROUNDED WITH SILT FENCE, LOCATED ON LAND WITH SLIGHT TO NO SLOPE, AND STABILIZE WITHIN 14 DAYS OF BECOMING INACTIVE.
 19. EXCAVATE EXISTING SLOPE SOUTH OF PONDS PLACING MATERIAL IN SOIL REGION 3 EXCAVATION AREA TO MEET THE DESIGN ELEVATIONS.
 20. NOTIFY THE PERSON RESPONSIBLE FOR STORMWATER SYSTEM CONSTRUCTION REVIEW AT LEAST THREE (3) DAYS PRIOR TO THE START OF THE STORMWATER SYSTEM CONSTRUCTION; STORMWATER FACILITIES MUST BE REVIEWED THROUGHOUT THEIR CONSTRUCTION.
 21. BEGIN EXCAVATING SOIL REGION 2, PLACING MATERIAL IN CONSOLIDATION AREA UNDER PROPOSED PAVEMENT AREAS WORKING NORTH TO SOUTH. RELOCATE CONSTRUCTION ENTRANCE TO LOCATION OF NEW PROJECT ENTRANCE. BEGIN ENTRANCE IMPROVEMENTS (SEE CONSTRUCTION SEQUENCE ON APPROVED ENTRANCE PLANS).
 22. CONSTRUCT STORMWATER MANAGEMENT FACILITIES BETWEEN PROPOSED PATH AND PAPER MILL ROAD. USING IMPORTED CLEAN FILL OR CLEAN EXCESS MATERIAL TAKEN FROM EXCAVATION AREAS WEST OF SOIL REGION 3 AND SUITABLE FOR RE-USE. STABILIZE IMMEDIATELY PER THE VEGETATION SPECIFICATIONS AND WITH SRBM 5. ALL CONVEYANCE AREAS, AND SLOPES 3:1 OR STEEPER, REQUIRE SEEDING AND MATING AT A MINIMUM.
 23. CONTRACTOR SHALL PROVIDE PEDESTRIAN PATH BETWEEN SITE ENTRANCE AND PROPOSED CONNECTION TO EXISTING SIDEWALK ON THE WEST SIDE OF PAPER MILL ROAD TO MAINTAIN PEDESTRIAN TRAFFIC DURING CONSTRUCTION. CONTRACTOR IS REQUIRED TO PROVIDE A PEDESTRIAN TRAFFIC PLAN TO CONSTRUCTION MANAGER AND TO THE CITY OF NEWARK.
 24. FILL IN SOIL REGION 2 USING SUITABLE MATERIALS FROM SLOPE EXCAVATION AREA SOUTH OF EXISTING PONDS OR CLEAN FILL.
 25. INSTALL INLET PROTECTION AS SHOWN ON PLAN. INSTALL THE STORMWATER CONVEYANCE SYSTEM, STARTING AT THE OUTFALL AND WORKING UPWARDS.
 26. RELOCATE EXCESS SOIL MATERIAL TO CONSOLIDATION AREA TO BE USED AS SOIL CAP FOR AREAS OUTSIDE OF PAVING.
 27. PLACE REMAINING SOIL CAP ON RELOCATED SOILS OUTSIDE OF PROPOSED PAVEMENT AREAS, USING CLEAN IMPORTED FILL OR CERTIFIED CLEAN EXCESS CUT MATERIALS FROM ON-SITE.
 28. INSTALL PROPOSED CURB AND GUTTER, FOLLOWED BY THE SUB-BASE AND BASE COURSE SECTIONS OF THE PROPOSED PAVEMENT. INSTALL SIDEWALKS, TRAILS, AND PLAZA BASE.
 29. PLACE TOPSOIL, FINAL GRADE ALL AREAS AND APPLY PERMANENT STABILIZATION AS SOON AS FINAL GRADE IS ACHIEVED.
 30. INSTALL WEARING COURSE ON PARKING LOT AND DRIVE AISLES. INSTALL DECORATIVE PAVING IN PLAZA.
 31. INSTALL LANDSCAPING AND SITE AMENITIES.
 32. THE EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION SITE REVIEWER. COORDINATE THE INSPECTION, AND AFTER THE WRITTEN APPROVAL, REMOVE THE REMAINING CONSTRUCTION SITE CONTROLS.
 33. PRIOR TO COMMENCING A NEW PHASE OF CONSTRUCTION, RECEIVE WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION SITE REVIEWER THAT THE PREVIOUS PHASE HAS BEEN SUFFICIENTLY STABILIZED.
 34. TERMINATE COVERAGE OF THE CONSTRUCTION GENERAL PERMIT, WHICH REQUIRES SUBMISSION AND ACCEPTANCE OF THE POST CONSTRUCTION VERIFICATION DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, ALL ELEMENTS OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED, ACCEPTANCE OF THE FINAL OPERATION AND MAINTENANCE PLAN, AND SUBMITTAL OF THE NOTICE OF TERMINATION.
 35. SUBMIT POST-CONSTRUCTION NOTIFICATIONS TO THE APPROPRIATE OR REQUIRING AUTHORITY PER THE CONTRACT PLANS, DOCUMENTS, AND SPECIFICATIONS AS REQUIRED.
 36. REGION#1 SOIL TO REMAIN IN PLACE WITH A TWO (2) FOOT IMPORTED CLEAN FILL SOIL CAP. AREAS OF REGION#1 WHERE PROPOSED GRADES PROVIDE LESS THAN TWO (2) FEET OF COVER SHALL BE EXCAVATED AND PLACED WITH TWO (2) FOOT IMPORTED CLEAN FILL SOIL CAP. EXCAVATED MATERIAL SHALL BE RELOCATED WITHIN CONSOLIDATION AREA.
 37. REGION #4 SOIL TO REMAIN IN PLACE WITH A TWO (2) FOOT IMPORTED CLEAN FILL SOIL CAP. AREAS OF REGION#4 WHERE PROPOSED GRADES PROVIDE LESS THAN TWO (2) FEET OF COVER SHALL BE EXCAVATED AND PLACED WITH TWO (2) FOOT IMPORTED CLEAN FILL SOIL CAP. EXCAVATED MATERIAL SHALL BE RELOCATED WITHIN CONSOLIDATION AREA.



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CURTIS MILL PARK
225 PAPER MILL ROAD
NEWARK, DE 19711

SEDIMENT AND STORMWATER CONTROL DETAILS 5 OF 5

CITY OF NEWARK
220 SOUTH MAIN STREET
NEWARK, DE 19711

NORTH

JOB NO.
CNEW 1207

SHEET 17 OF 17

SCALE
AS NOTED

DRAWN BY
MH

DATE
1/31/13

APPROVED
WFW

DRAWING NO.
CS-8505

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR
ALL DIMENSIONS MUST BE FILED WITH THE CITY OF NEWARK
DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

1/19/2007

1/19/2007

1/19/2007

ENGINEERS • Surveyors • Planners • Landscape Architects

Pennoni Associates Inc.